PULP & PAPER

AUGUST 1957

Diamond's New Pulp Uses

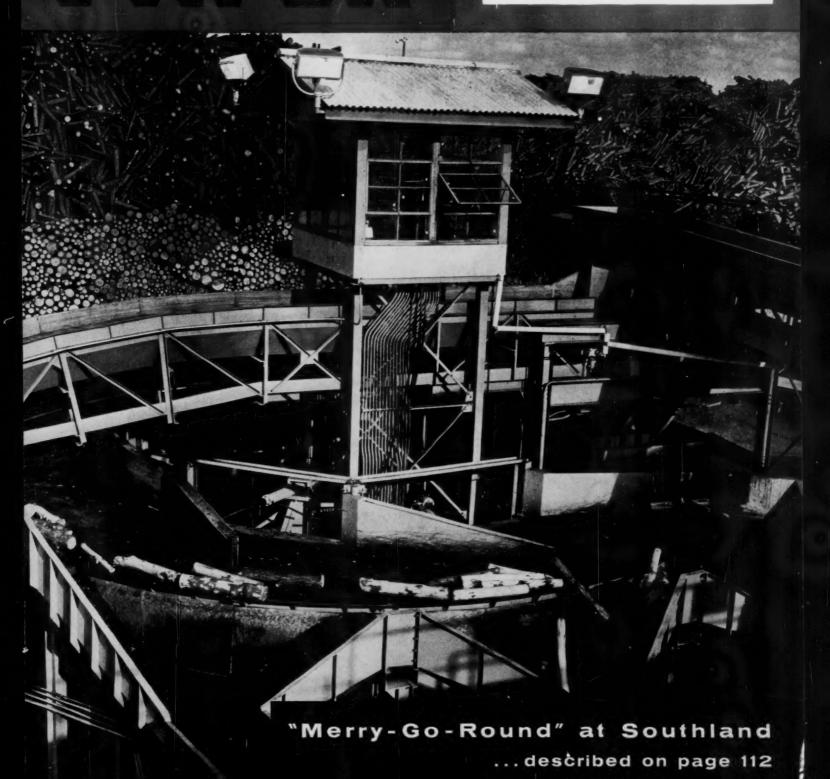
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A New Continuous Digester

page 42

Testing Logging Machines

page 108



Only the Best goes into Puget Pulp

Pulp quality remains high only if chemicals are controlled by advanced technological equipment.

Puget Pulp prides itself in the modern control equipment used in manufacture of its product. That's one of many reasons why converters prefer Puget Pulp.

PUGET SOUND PULP AND TIMBER CO.

BELLINGHAM. WASHINGTON



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Open frame construction, faster roll changes, perfect alignment of rolls regardless of diameter, elevators, hydropneumatic pressure systems, and built-in cranes, are but a few of the advanced features which have already caused six of America's leading paper mills to order Rice Barton-Eck Supercalenders.

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- 83 tons of newsprint at 1.7% consistency

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Canadian Manufacturers of Bird Machinery
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READER'S GUIDED TOUR

VOLUME 31 NUMBER 9

New Uses are Found for Woodpulp in Northeast

39

An important development in merger of Diamond Match and Gardner Board & Carton will be new accomplishments in molded pulps and better wood resource use

How New Continuous Digester in Far West Went to Work

Picture story of Kamyr, second in U.S.A., explains process put in effect for neutral sulfite board at Weyer-haeuser's Longview, Wash., operations

Special Field Report on What is New at Southland

The Newsprint Gamble That Paid Off . . . some interesting history How Southland Revamped with No. 3 . . . what new machine accomplished Something New in pH Control . . . a report on use of instruments

(See PULPWOOD SECTION, below, for two more reports on Southland Mills)

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New Paper Use And I Quote The Last Word—P&P Editorial Views

New Equipment and Supplies

ABOUT OUR COVER ABOUT OUR COVER
Heart of Southland's new
woodyard system is 43 ft,
turntable. Conveyor from
woodyard crosses under
tower from left, another
comes in from right, both
empty into common chute
at tower's right. Two
hydraulic gates can be
seen at front of turntable;
stationary gate is at right.
Chutes lead to three barking drums. System was
devised by Link-Belt Co,



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Nominal Pipe Size	Maximum Wall Thickness		
36	1.250		
30	2.000		
26	2.000		
24	1.500		
20	1.375		
18	2.250		
16	2.125		
14	1.750		
12	2.000		
10	2.000		
8	1.750		
6	1.000		
5	.625		
4	.750		
3	.625		
21/2	.375		
2	.500		

rnese straight elbows can be furnished with LONG TANGENTS at no extra cost. All thicknesses less than those shown above are, of course, available.

The exclusive Midwest method of making all welding elbows from plate instead of tubing gives us a FLEXIBILITY OF MANUFACTURE that is much greater than by any other process. These heavy wall Midwest straight and reducing elbows are available in any material that can be secured as plate. The maximum wall thicknesses for which we now have equipment are indicated by the tables at left and right. And, because it is easier to get plate than tubing, better delivery is another advantage. Still another is the close tolerances inherent in our

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You will find it to your advantage to send us your inquiries.

REDUCING LONG RADIUS 90° ELLS

Nominal Pipe Size	Maximum Wall Thickness				
30	2.000				
26	*				
24	2.000				
20	2.000				
18	2.000				
16	1.500				
14	1.750				
12	2.250				
10	2.000				
8	1.750				
6	1.000				
5	.625				
4	.750				
3	.625				
21/2	.375				
2	.500				

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Advertising & Production Office 370 Lexington Ave. New York 17, N. Y. MUrrayhill 3-9294

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Anonymous letters will not be considered but es may be withheld if desired.



THE EDITOR READS HIS MAIL



Swedish Audience Told Of PULP & PAPER Feature

-Orebro, Sweden Editor: Many thanks for lending me the pictures from your articles on the new Crown Zellerbach system for conveying and shipping noodle pulp from Elk Falls, B.C. (p. 52, Feb. 1957 issue) to Antioch, Calif. (p. 48, May, 1957 issue).

I had slide pictures made from your photographs for my talk before the Common Swedish Shipping Association. They aroused a great deal of interest, and so did your story. The Crown Zellerbach system is a really top development in materials handling. I think Crown is contributing notably to the engineering progress.

INGMAR EIDEM, General Manager, Orebro Pappersbruk A.B. (Paper Mill).

A Paper Palace in 1958 -Invitation to Belgium

-Antwerp, Belgium Editor: It may interest readers of PULP & PAPER to know that the paper and graphic arts industries will be very well represented at the Brussels World's Fair in 1958.

I am enclosing an artist's sketch of the Paper Palace which will be a prominent exhibition center for this

The Belgian paper industry and the graphic industries are associated in a project to erect a common Palace, which will be located on the Avenue of Belgium, the World Fair's main avenue going from the Central Palaces to the Atomium. Plans for this Palace are the work of Architects Albert J. De Doncker and Alberto Vanderauwera. The whole will give a synthesis of papermaking, from woodpulp to the final transformations. The graphic

arts are also shown, from ink to art editions and bookbindings. The public will see an ultra-modern printing machine at work. The main feature of the architectural composition will be the apparent framework in wood, as well as the development of a huge S-shaped panel, imitating a sheet of paper. The roof is planned to provide an interesting view from the Atomium, with colored covering and movements of the roof framework. An entrance in the shape of a sheet of paper will give access to the hall, the reception-room and the offices. There will also be a museum in which a reproduction of the very first paper machine will be exhibited.

I hope that you and many repreentatives of the American paper industry will come to Belgium to visit this World's Fair.

Needless to say, I will be very happy to welcome friends and visitors from the States and Canada.

WILLIAM F. BOKS, Administrator-Director, Cie. Gross & Irgens Pulp and Paper Agents and Importers

Two Mills Lost—Still Hopes

-Paris, France Editor: I have not lost interest in your magazine and your industry, despite the unfortunate events that have befallen our company. The Indo-Chino Paper Co., of which I am president, has had two factories in Tonkin entirely destroyed and I have not been able to finalize reconstruction of a paper industry in Indo-China for reasons that are evident in that country.

> F. BERNARD President, Indo-Chino Paper Co. 23 Rue del'Amiral d'Estang, Paris



The Palace of Paper—at 1958 World's Fair in Brussels

Portrait in Pulp: The Gottesman Organization.

Age: 71. Sources: Outstanding pulp producers everywhere. Supplies: Bleached and Unbleached Sulphire,
Bleached Hardwood, Groundwood, Bleached and Unbleached Kraft. Shipments: On schedule. Service: Expert,
from a carload up.

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Representatives in 55 Leading World Markets





- NO MAJOR RECESSION IN SIGHT. . . . Out of 110 presidents of large corporations who were asked by <u>Dun's Review and Modern Industry</u> to predict the economic future of the nation and their companies, nearly three-quarters are confident no important economic setbacks will occur in the coming decade.
- WORLD SETS NEW PULP AND PAPER RECORDS. . . . Worldwide paper and paperboard production was 67,843,779 short tons in 1956, an increase of 3,188,037 tons over 1955 and 10,831,341 over 1954. Worldwide pulp production (wood, bagasse, bamboo, straw, etc.) totaled 54,372,758 tons, an increase of 3,501,696 over 1955 and 7,958,922 over 1954 (copyrighted data gathered from all countries in PULP & PAPER's 1957 WORLD REVIEW NUMBER, just recently published).
- STRENGTH OF FREE WORLD MEASURED IN PAPER. . . . A pushbutton may settle the next war, but pulp and paper is a basic measure of strength of countries in war and peace. PULP & PAPER again took this measurement of the Red World vs. Free World in its new 1957 WORLD REVIEW NUMBER. Free World per capita consumption in 1956 was 69 lbs.; that of the Communist Bloc (not inc. Yugoslavia) was only 12.9 lbs. The Free World made 61,978,589 tons of paper against the Communist Bloc's 5,865,190, a ratio of 10 to 1. The population ratio is less than 2 to 1.
- OTHER INTERESTING FACTS. . . . PULP & PAPER'S WORLD REVIEW NUMBER is chuckful of interesting facts and statistics . . . the most complete volume of its kind published anywhere. It shows 1956 leaders in this order: Per capita paper consumption: U.S.A., Canada, Sweden, Britain, Switzerland, Norway. Paper production: U.S.A., Canada, Britain, West Germany, Japan, Russia. Pulp production: U.S.A., Canada, Sweden, Finland, Russia, Japan. Red China climbed to 10th in paper, 15th in pulp.
- OREGON MAY GET NSSC PULP MILL. . . . An Oregon lumber producer is reported to be ready to build a pulp mill to produce NSSC bleachable pulp from hardwoods at 50 tons per day if market commitments are obtained.
- FOLDING BOXES USE WILL GROW 50% BY 1965. . . . So says Gustav L. Nordstrom, executive director of the Folding Paper Box Assn. "We expect sales of \$1.5 billion against last year's sales of just over \$900 million." One spur to growth will be use of packaging to cut distribution costs. The association is planning a survey to determine how better packaging can reduce operating costs in department stores.
- DISSOLVED OXYGEN OF RIVER WATER IS BOOSTED by whipping air into water inside turbines used for generating electrical power. In recent tests at Consolidated Water Power & Paper Co.'s Wisconsin Rapids and Du Bay plants, dissolved oxygen was increased about one-half part per million, a significant addition. If this can be achieved without loss in volume of power, turbine reaeration seems a practical method of stream improvement. Marathon Corp. is also testing.
- NEW MILL IN LOUISIANA. . . . Previous exclusive first reports published in this department that Crown Z was looking over DeRidder, La., for a mill site took definite shape in July when Vertrees Young, vice pres., announced CZ's acquisition of a new pulp mill site near there and of 27,000 acres of adjacent property. A portion of the land will be an impoundment lagoon for mill effluent and much of the remainder will serve as the nucleus of a reforestation program. CZ is setting up a forestry organization in DeRidder.

Please turn page for more



QUALITY IS NEVER AN ACCIDENT

It is always the result of high intention, sincere effort, intelligent direction and skillful execution. It represents the wise choice of many alternatives and the cumulative experience of many craftsmen. It marks the achievement of an ideal after necessity has been satisfied.

It is, therefore, no accident that the very latest in processing and control equipment has been installed at the Demopolis mill. A group of competent employees with a background of excellent technical ability and long experience will produce super white E-Z PULP.

Remember the green tree trademarks—they are symbols of quality.

Complete information and technical aid are available. Write our E-Z PULP Sales Division (Dept. E), Box 491, Tuscaloosa, Alabama.



E-Z PULP SALES DIVISION, TUSCALOOSA, ALABAMA

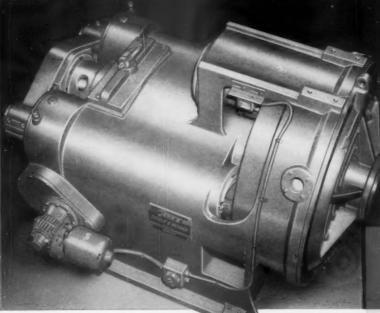
- JUST TEAR IT UP, THROW IT OUT. . . . There'll be no washing and dry-cleaning problems with a disposable wardrobe made of knitted paper. Dr. Dorothy S. Lyle, director of consumer relations for the National Institute of Dry Cleaning, says such clothes may be closer than one thinks. Men's paper shirts and paper bathing suits that will take five or six washings or immersions are already available.
- CHAMPION TO SPEND \$84 MILLION IN NEXT FIVE YEARS in its planned capital spending program, says Reuben B. Robertson, chairman, Champion Paper & Fibre Co. Capacity will be increased by as much as 25% if the market can absorb it. If not, funds will be used to improve present plants. He said sales recently "had been better than in many months."
- PULPWOOD CONSUMPTION WILL MORE THAN DOUBLE IN LOWER MICHIGAN. . . . G. B. Bonfield, vice pres. of American Box Board Co., says consumption by six mills in 1956 was 296,000 cords, and that nine mills (three new) will consume 704,000 cords by 1960. Use of aspen, other hardwoods and pine will jump.
- TO BUY \$3,000,000 BAG FIRM. . . . F. D. Gottwald, president of Albemarle Paper Manufacturing Co., announces plans to buy an un-named bag manufacturing company, move part of the plant operations to Richmond, Va., and expand the concern.
- NEWSPRINT OUTPUT HITS RECORD PEAK. . . . An all-time high of 806,347 tons turned out by U.S. mills through May is 100,098 tons more than in first five months of 1956. Canadian output of 2,779,547 tons also broke all records and is 119,745 tons more than last year.
- AUG. 15 STARTUP FOR BRITISH COLUMBIA PLANT. . . . Pres. J. A. Craig of Sidney Roofing & Paper Co. says move of the firm's plant from Victoria to its new location in Burnaby, east of Vancouver, B.C. should be complete by then. First facility to begin operating will be a Black-Clawson six-cylinder, 120-in. paper-board machine. Three paper and felt machines and a roofing mill in Victoria will be moved.
- FIRST HALF SALES WILL BE UP 7% TO 8% for Fibreboard Paper Products Corp., predicts W. L. Keady, president. Sales of paperboard and other packaging materials are about 10% ahead of this time last year, he says, but building materials sales are running behind 1956. Projected requirements indicate that a new pulp and paperboard plant, equal in capacity to Fibreboard's present San Joaquin mill, will be needed by 1960, and another such plant by 1965.
- PLANS MOVING AHEAD FOR ALASKA MILL. . . . Stevenson & Fubens, Seattle consulting engineers who have done work for St. Fegis and other pulp and paper firms (see page 152), have been appointed to design the new Japanese-sponsored Alaska Lumber & Pulp Co. mill at Sitka, Alaska. Harold D. Cavin, Bellingham, Wash., will supervise as chief engineer. He built the Ketchikan mill. . . .
- PROGRESS TOWARD NEW CALIFORNIA MILL. . . . Eureka, Calif., has formed a water district and voted \$12,000,000 to provide water for the pulp and paper mill to be constructed there by Simpson Timber Co. and Fibreboard Paper Products. Corp. A 200 acre site on Somoa Peninsula has been secured and engineering completed. Lines to provide gas for the mill are installed.

Please turn page for more



Jones DOUBLE-D WITH



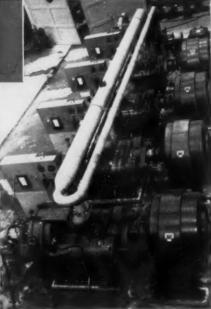


The clean, sturdy compactness of the Double-D requires a minimum of floor-space: it can be located almost anywhere.

Four 42" Double-D's in line serve the big new Kraft machine at International Paper's Mobile, Ala., plant. Note simplicity of piping — no special fluming or flow-boxes needed.

Not only does the amazing Jones Double-D refiner do twice the work of conventional refiners — not only does it provide two stages of refining in one pass through the machine — not only can it, if need be, defiber in the first stage and thoroughly refine in the second — but mills where it has been tried and proved for over two years report that it produces stock of equal or better quality than similar machines, even on hard-to-work stock.

Fully-pressurized, economical of floor-space, horsepower and maintenance, the Double-D is very clean in its dealing with stock; and will give any degree of refining from hydration to severe cutting. Has many other advantages. Ask your Jones representatives, or write today for Bulletin EDJ 1083.



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Export Agents: CASTLE & OVERTON, INC., New York 20, New York

E.D. ones

In Canada:

The Alexander Flock, Ltd., Ottawa

- FLEMING & SONS ENTERS SHIPPING CONTAINERS FIELD. . . . Fleming & Sons, Inc., of Dallas,

 Tex., one of the oldest board manufacturers in the nation, has entered the
 shipping container field with a new addition to its plant in Dallas. Provisions for shipping containers totalling 32 million sq. ft. a month have
 been added.
- UNION BAG-CAMP EXPANSION CONTINUES. . . . A multi-stage steam turbine has been ordered from General Electric as part of the expansion plans Union Bag-Camp has for its Franklin, Va., mill. Turbine is rated at 2100 hp at 5000 rpm. Delivery date: mid-1958, just about the time the new Beloit machine is ready to start up there.
- ENCOURAGING FORESTRY NOTE. . . . Southern Forest Experiment Station reports softwoods have increased 15% by cubic volume in the Ouchita Forest region during the past 20 years. Gain, says the station, is largely due to good management.
- WORK HURRIED ON SONOCO EXPANSION. . . . Three contracting firms are working simultaneously on various phases of the expansion program at Sonoco Products Co., Hartsville, S.C. Program includes a new power plant, chemical recovery plant, wood pulp mill and 170 in. Fourdrinier for .009 corrugating which will have an ultimate capacity of 350 tons a day. Startup date: 1958.
- JULY A BIG MONTH IN SOUTH. . . . July was a big month in Dixie, expansionwise. Three big mills added new production to the South's staggering output. At Demopolis, Ala., finishing touches were added to the new Gulf States Paper Corp. market pulp mill. The 300-ton a day mill, now undergoing its shakedown, features a Kamyr continuous digester. In Jacksonville, St. Regis was ready to shakedown its huge 1,000-ton-a-day Beloit machine, the "Seminole Chief," quadrupling production. In Charleston, S.C., West Virginia Pulp and Paper Co. is putting its new expansion through the try-out stage. This \$20 million job features a machine with stainless steel wirepit.
- LOOK OUT FOR SO-CALLED WILDERNESS BILL. . . . It would seriously affect economy of Western states, among others, tying up maximum of 54 million acres right away. Establishment of National Wilderness Preservation System would grant special privileges to a small group, the wilderness enthusiasts, less than 1% of recreational public. See report in PULPWOOD SECTION.
- LARGE TIMBER HOLDERS MISSED BY SKIN OF TEETH being "liquidated." This is what a recently proposed law in Mississippi would have done. Holders of large timber blocks would have been forced to sell. It can't happen here? It almost did and don't be surprised to see more legislation to this effect next session, in other Southern states.
- PULP MILL BUILDERS GET EXTENSION. . . . The Saskatchewan government has given a three months extension to Waskesiu Forest Products Ltd. on its timber option granted a year ago, which expired in May. Waskesiu proposes to build a sulfate pulp mill near Prince Albert and would have access to 10,000,000 acres of timber under the agreement.
- MACHINE PROGRESS AT HULL. . . . Construction of a new building to house the E. B. Eddy Co's new No. 4 paper machine at Hull, Que., has been started, and it is expected that the unit will be in production by the fall of 1958. Beloit Iron Works is supplying a 90 ton a day 149 in. Yankee machine.

Have any questions about pulp?



The pulp you see in this illustration is Abitibi Bleached Sulphite

Mead customers never do!

There's never a doubt about supply or delivery on time. Vast natural reserves and the resources of eight great mills make Mead the dependable source of supply. And Mead's modern and extensive research facilities assure you of the kind of pulp that meets or exceeds any standard

of quality. Tell us about <u>your</u> pulp requirements. Whether the pulp you need is chemical or mechanical, from hardwoods or soft woods, bleached or unbleached, our representative will gladly show you why Mead answers your pulp demands best.



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WORLD PULP & PAPER

General News

Russia Learns to Use Hardwoods

Moscow . . . The Kekhra cellulose plant, in conjunction with the Central Soviet Research Institute, reports success in producing sulfate pulp based on a mixture of deciduous and coniferous wood. A mixture of 40% birch and 60% fir or spruce reportedly provides pulp for good quality corrugated board, while a mixture of 20% aspen and 80% coniferous wood waste is suitable for making good quality kraft paper.

International Committee to Meet

Dr. Wilfred Gallay, director of research, The E. B. Eddy Co., Hull, Que., has been appointed to the pulp and paper committee of the International Union of Pure and Applied Chemistry (IUPAC). The union, world-wide in scope, has as its function the dissemination and exchange of information in chemistry on an international level with a view to collaboration among nations. It will meet in London in September.

Won't Use Nitric Acid Process

Ciudad Juarez . . . Fabricas de Papel Tuxtepec, S. A. de C. V., builders of Mexico's first newsprint mill, seriously considered using the DesForges-Bouffe nitric acid pulping process but decided not to, at least for the present. Structural work is about 85% complete on this new mill. Production begins early in 1958. The mill's capacity of 100 tons a day will satisfy a major part of Mexico's newsprint needs. Ciudad Juarez, a new town growing as a result of the mill, will be a model of modern planning.

Newsprint from Palm Trees

Mexico, D.F. . . . A newsprint mill, using Chinese palm and other trees of the agava family, is planned by the Industrial Chambers Confederation, Mexico. Initial production will be 18 tons of cellulose daily from raw material from the states of San Luis Potosi, Zacatecas, Nuevo Leon, Coahuila and Tamaulipas. Laboratory tests show that cellulose from the agaves can be processed easily and cheaply, the Confederation reports. The mill will be at Matehuala, San Luis Potosi.

Grass Tested for Pulp

Dacca, East Pakistan . . . About 12,-000 lbs. of khagra, nal and ekra-all local grasses have been sent to the Madison, Wis., U.S.A., Forest Products Research Laboratory to determine percentage of pulp content. If suitable, the grass will be used to make writing paper and fiberboard. Earlier experiments were done by Dacca University.

For Belgium's Newsprint Needs

Antwerp . . . A large newsprint machine, operating since the end of 1956 at the Langerbrugge mill of Papeteries de Belgique, was officially inaugurated recently by Prince Albert, brother of King Baudouin. The Walmsley machine is 256 in. wide, 410 ft. long, and has a speed of about 1970 fpm. Capacity is 66,000 short tons per year. The Langerbrugge mill is the only newsprint mill in Belgium. It makes its own mechanical pulp from Scandinavian wood imported by full shiploads. The mill has two other newsprint machines, capacity 132,000 short tons per year, which cover the Belgian newsprint requirements and leave a surplus for export.

Giant Newsprint Machine.

Stockholm . . . Karlstads Mekaniska Werkstad (KMW) is completing a 360 ft. long newsprint machine for Swedish Cellulose Co.'s new mill at Ortviken, at a cost of \$2,300,000. The first of two units to be installed at this mill, it is designed for a speed of 1,970 fpm, with a width of 262 in.

Pulp for Red China?

Montreal . . . Although the United Kingdom has relaxed trade restrictions with Communist China and there has been some discussion in Ottawa as to whether Canada should take similar action, selling woodpulp to China still seems remote. However, Hong Kong importers touring Canada report a strong demand in mainland China. L. Liu, of China Resources, Hong Kong firm, made specific reference only to pulp in conversing with Ottawa officials. Simon Yuen, of the Nationalist group in Taiwan, reports that there is a market there for pulp.

Expansion at Finnish Mill

Vilppala, Finland . . . A new woodroom, a 388,000 cu. ft. chip silo and boiler house are being installed at G. A. Serlachius Co. A new digester, lined with stainless steel will "last forever," according to Count B. Vitzthum, vice managing director.

Argentine Investment Open

Buenos Aires . . . Complete or partial finance and know-how is desired to

set up a 20 ton paper mill in the suburbs of Buenos Aires, to produce cardboard. Capital of \$2,300,000 (U. S.) is required to complete and equip the mill. For more information write the Inter-American Investment Opportunity Service, International House, 607 Gravier St., New Orleans, La., mentioning Project No. 28, Argentina.

Plan Pulp Mill in Kenya

Nairobi . . . The Kenya Government is attempting to interest some firm in building woodpulp and paper mill at a cost of \$4,200,000. The mill would produce about 27 tons of pulp a day, half to be made into kraft paper and the remainder, printing and writing paper.

British Machine for Germany

Munich . . . The Munchen Dachauer Mill of Heinrich Nicolaus G.mb.H. has ordered a Shartle-Dilts stock preparation system and paper machine from Black-Clawson International, Ltd. This is reported to be the first British machine to be imported into Germany, at least since WW I. It is designed to produce 260 tons a day of mechanical printings and magazine papers at 2,000 fpm. The Fourdrinier is cantilever type, followed by a vacuum pick-up.

New Post in Mexico

Mexico, D.F. . . . John H. Boyle, asst. export mgr. for Kimberly-Clark Corp., is appointed sales mgr. of the Neenah, Wis., firm's Mexican subsidiary, La Aurora, S.A.

Swedish Exports to Increase

Stockholm . . . Swedish pulp, paper and board exports are expected to increase by \$16,405,000 to \$223,880,000 in 1957, says the Stockholm business weekly Affarsvarlden. Shipments of newsprint are expected to increase by 49,500 tons to 319,000 tons. Other paper and board increases are estimated at 4%, to about 770,000 tons, and wallboard, 10% to 363,000 tons. Chemical pulp exports are expected to increase 90,500 tons to 2,420,000 tons and mechanical pulp, 11,000 to 484,000 tons.

Whakatane Manager Dies

Rotorua, N.Z. . . . Ernest B. Brown, general manager of Whakatane Board Mills Ltd., died suddenly on May 25, 1957, at the age of 51. He had been with Whakatane mills 27 years.

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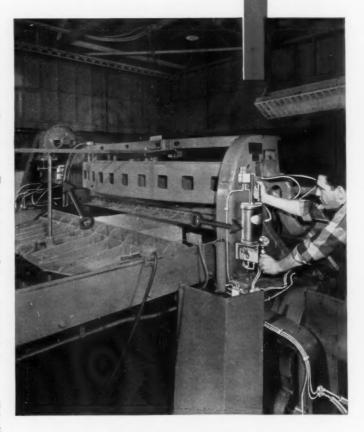
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Farval manual lubrication system on a 94" Seybold Trimmer, Model 152 at the Hammermill Paper Company, Erie, Pa., saves time and money, helps maintain high, steady production.

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WORLD PULP & PAPER

Technical News

PULP & PAPER's selection of significant technical developments this month are recorded in publications from West Germany, France, Sweden, Czechoslovakia and U.S. (University of Minnesota).

All are from the foreign technical press, except for the last named—a domestic doctoral dissertation, a source of information which is often not very accessible and undeservedly

neglected.

Common feature of these selections is that they all deal with advances and improvements in machinery—design improvements and better understanding of operational principles and practices. Some may prove very important in near future or distant future . . . time will tell.

These reports deal with rolls, screens, felts, mixers, web winders.

Trend Toward Speed, Foolproof Equipment . .

There is nothing radically new in any of the current industrial developments. But a steady trend toward faster, more efficient and smoother machine operation and greater and better output by more foolproof methods is evident. Without a fundamental grasp of the functions and limitations of his machinery, the mill operator cannot do the best possible job or keep his equipment in perfect condition.

Similarly, an orienting knowledge of improvements made by others in his field—such as these collected by PULP & PAPER, which originate in five countries—will help a superintendent or engineer to correctly judge the merits of his installations and to make timely plans for their modification.

These are presented with permission of the Institute of Paper Chemistry, and with assistance of Curtis Brown, editor, B.I.P.C. Bulletin. Photostats and/or translations may be obtained by writing Eugene Bunker, librarian, Institute of Paper Chemistry, P.O. Box 498, Appleton, Wis., U.S.A.

New Type of Mixer.... KORDA, PIERRE. Génie chim. 77, no. 3: 70-83 (March, 1957). [In French; English and Spanish summaries]; Bull. Inst. Paper Chem. 27: 1130.

The technique of mixing solids and/or liquids, which was hitherto an art, has progressed into a precise tool of science, largely through the development of novel mixing apparatus, in which projecting scrapers lift the

contents from the walls and disperse them homogeneously with high precision at great speed. One novel type of mixer comprises a lightweight slowly rotating drum, a horizontal shaft following the drum axis, and concentric blades set on the shaft at progressive angles and turning at high speeds in the same direction as the drum. Complete blending can be achieved in 30 sec. to 8 min. Among various industrial applications for this new type of mixer is the uniform coating of wood chips with adhesive prior to compression into particle boards. 1 table and 58 figures.

New Method to Measure Nip Deformations . . . FAHLIN, B., and JORDANSson, L. Nip deformation of rubbercovered rolls. Part 1. Svensk Papperstidn. 60, no. 7: 252-4 (April 15, 1957). [In Swedish; English and German summaries] Bull. Inst. Paper Chem. 27: 1132-3. A new method for measuring the deformations in the press nip of rubber-covered rolls developed and tried in one of the presses of the experimental paper machine at the Central Laboratory of the Swedish Paper Mills. By means of flat gridwire strain gages of special design, vulcanized in different positions within the rubber cover and coupled to a vibration analyzer and a Mingograph recorder, it has been possible to get a full picture of the roll deformations under normal running conditions in the paper machine. During the experiments, linear pressures up to 200 lb/inch were applied, and the machine speed was varied up to 750 f.p.m. The measuring technique and the necessary equipment are described, 3 figures and 6 references.

New Screen Use . . . Piesen, S. An analytical approach to knotter waste water. Sborník výzkum. prací z oboru celulozy a papiru (Collection Czechoslov. Pulp and Paper Ind. Research Works) 1: 252-62 + 1 inserted page (1956). [In Czech; Russian and English summaries] Bull. Inst. Paper Chem. 27: 1133.

Long-term investigations of water-circulation problems in many paper mills show that knotter waste waters represent an important source of fiber losses. The amount of fibers lost is rarely below 200 mg./liter, thus making an additional water treatment imperative. The use of an auxiliary flat knotter screen is proposed for eliminating or minimizing fiber losses and

utilizing the return waters for rotaryscreen showers. 2 tables and 11 figures. C.L.B.

Automatic Winding of Plastic Film . . . Schmitt, Walter. Kunststoffe 47, no. 5: 244-6 (May, 1957). [In German] Bull. Inst. Paper Chem. 27: 1133.

The steadily increasing speeds of machinery used for manufacturing and converting plastic films require a continuous web-winding device. The greatest difficulty is the separation and restarting of the web when the rolls are changed. After an introductory discussion of winding for storage, a winder with automatic cutting and joining mechanism is described. I table and 4 figures. C.L.B.

Why Wet Felts Plug . . . Drescher, Robert Fredrick. The relation of certain micro-organisms to the plugging of paper machine wet felts. (Univ. of Minnesota). Univ. Microfilms (Ann Arbor, Mich.), Publ. No. 19,198: 77 p.; Dissertation Abstr. 17, no. 3: 478 (March 1957); Bull. Inst. Paper Chem. 27: 1129.

The ability of wet felts to remove water from the paper web is important in the papermaking process. Tests on 58 felts showed considerable variation in porosity between different felts and sometimes even across the width of a single felt. The deposits in the felts which were found to be responsible for the reduced drainage comprised principally mineral compounds (up to 20% by weight of some felts), such as ferric hydroxide (up to 3.5%) and aluminum hydroxide (up to 4.1%), as well as rosin (up to 8.6%) carbohydrate gums (1.1%), wool-felt scales, and micro-organisms. Neotetrazolium chloride, a dye which becomes colored in the presence of living bacteria, indicated the presence of bacteria on the wool fibers, in the interfiber spaces, and associated with the plugging deposits. Sphaerotilus natans, a filamentous ensheathed iron bacterium, was isolated from 54% of the felts obtained from 13 paper mills in 9 states. This organism was found to bind clay particles to its ironencrusted sheath and to entrap the particles by interweaving of filaments. Fungi appeared to be the main cause of plugging in one felt only, in which the mycelium was coated with ferric hydroxide which, in turn, bound mineral particles. The mycelium also entrapped mineral particles by interweaving of filaments. C.L.B.



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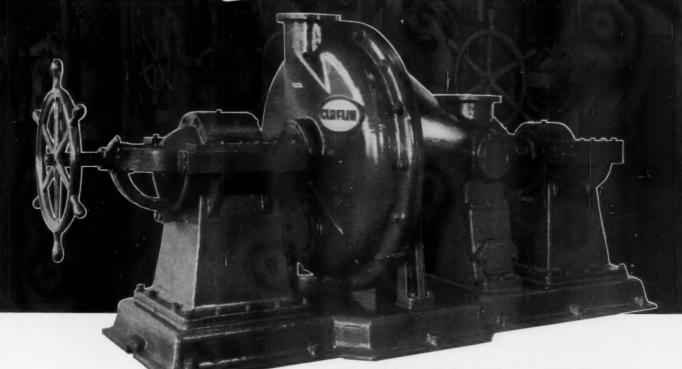


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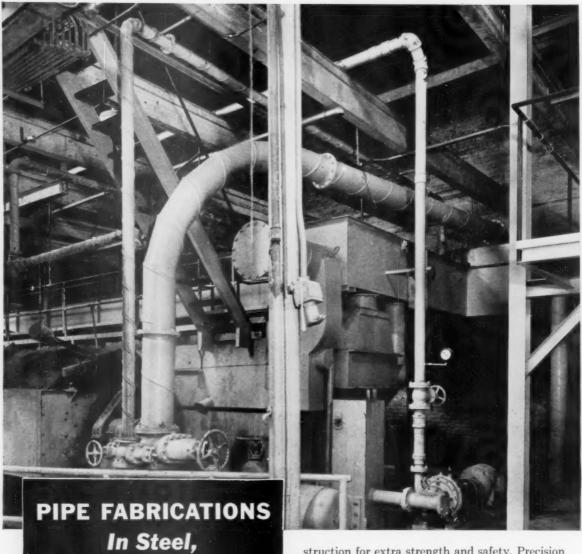
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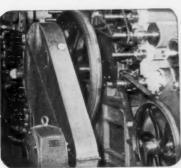


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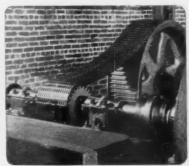
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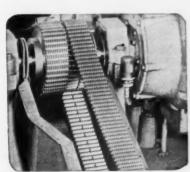
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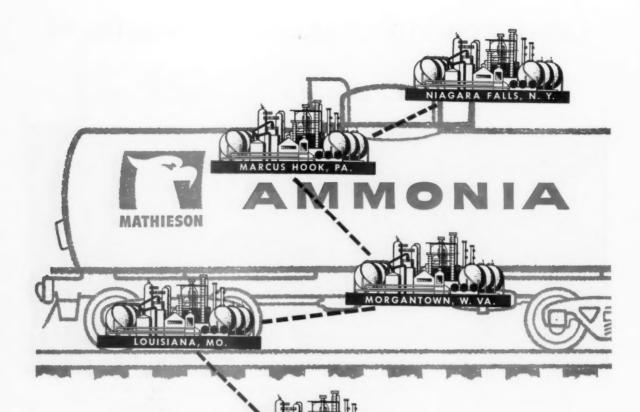
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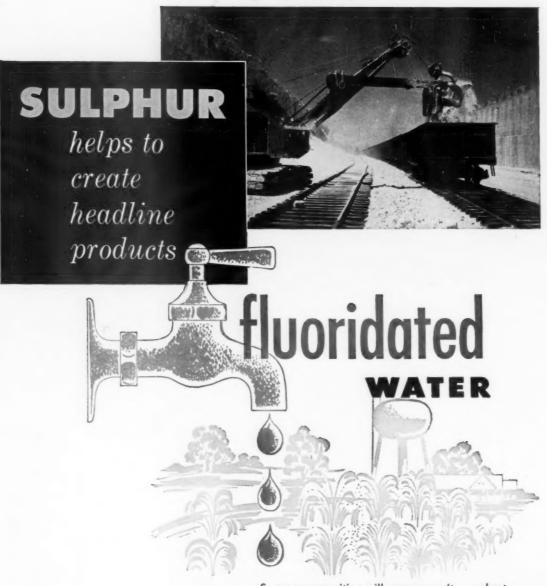
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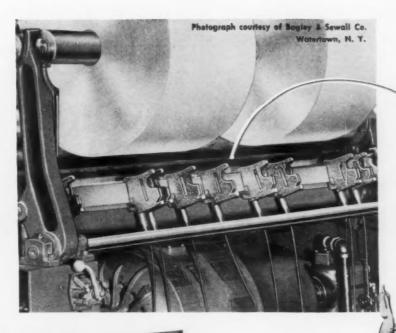
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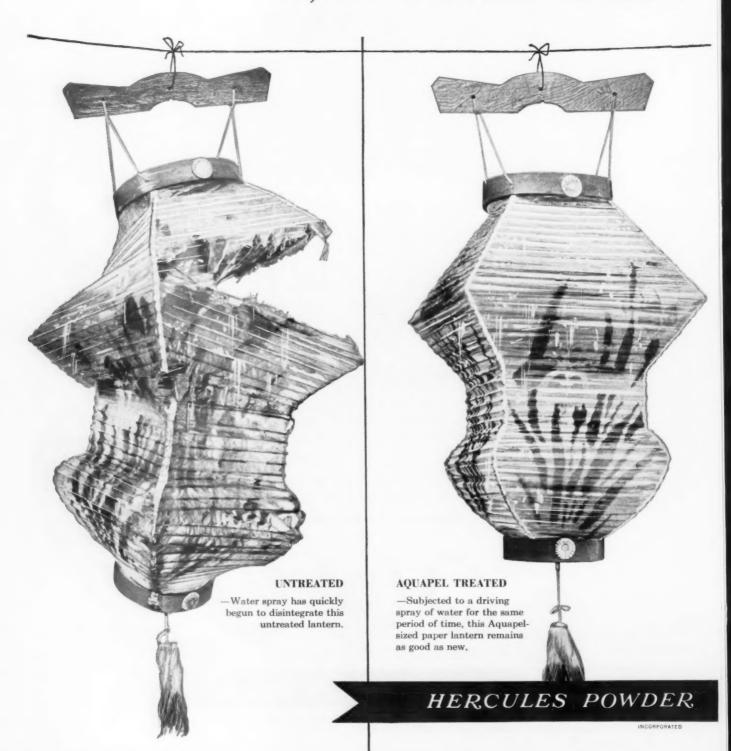
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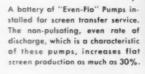
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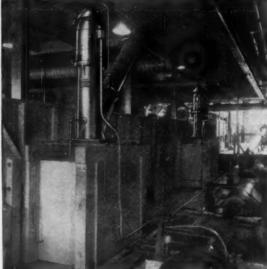
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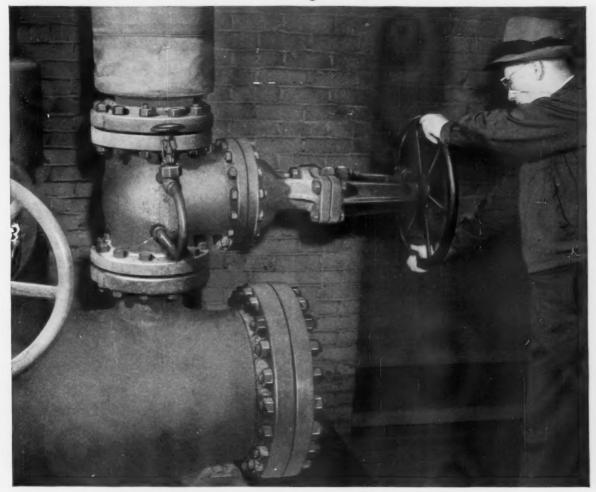
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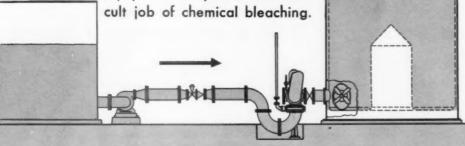
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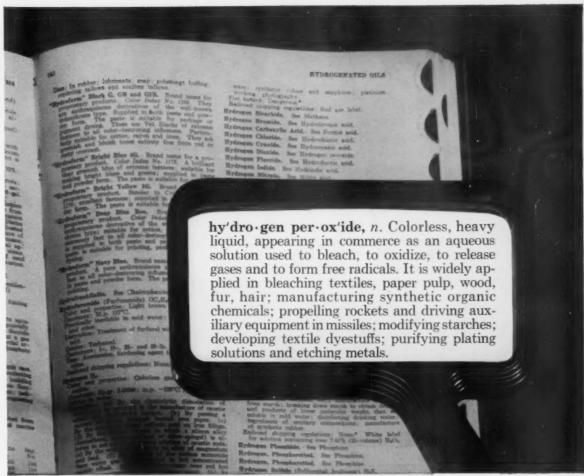
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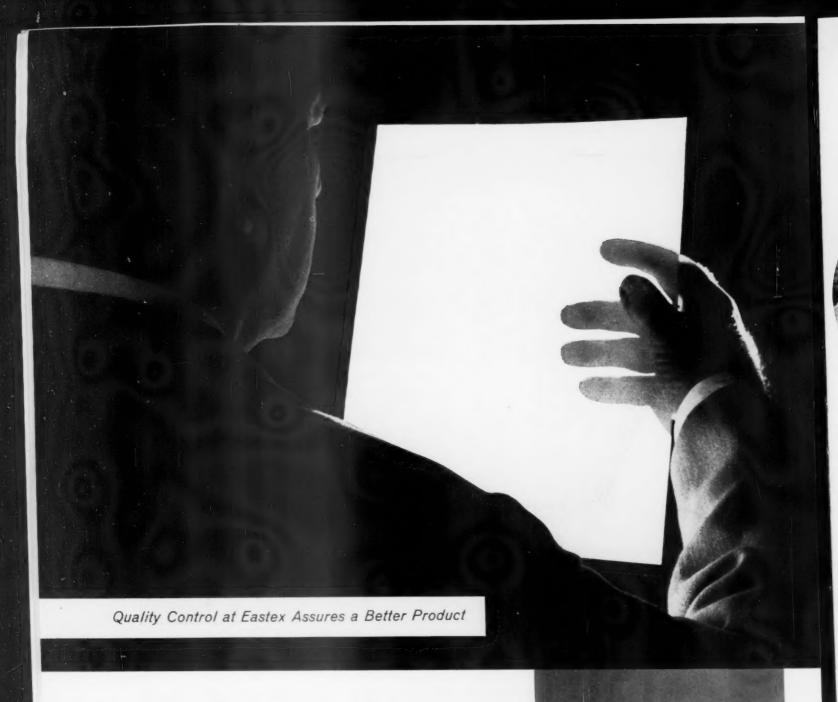
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"CAMERON 468 improved the quality of our board rolls" -says Rex L. West, Assistant Paper Mill Superintendent

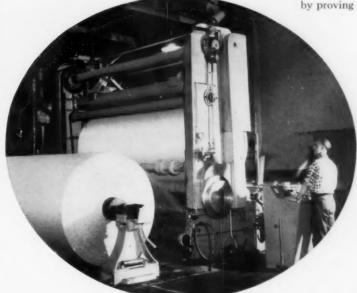
"The outstanding advantage of our new Cameron 468 Winder is its ability to make a good roll. Our 468 is rated at speeds which provide ample reserve for anticipated future expansion. However, speed is a secondary consideration. Of first importance to us is the quality of the rolls.

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"Cameron winders have earned our respect by proving their ability to meet our demands."



Rex L. West

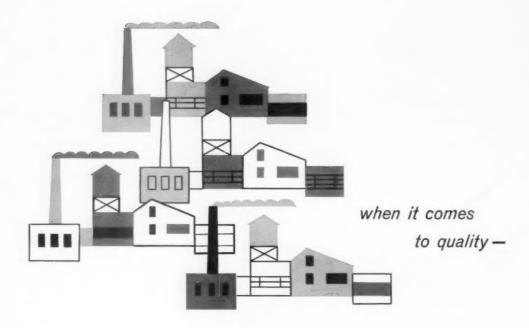


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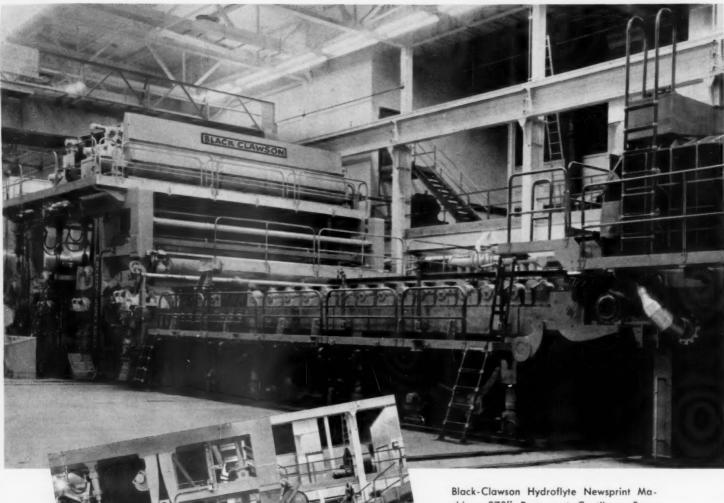
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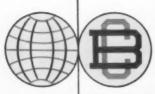


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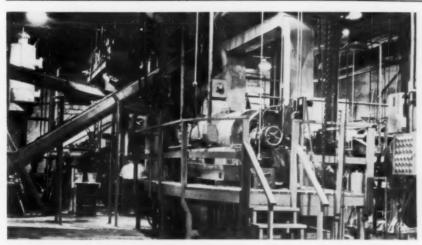
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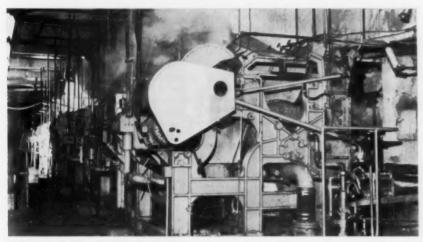
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From Here, a Satisfactory Fiber . . . This is Bauerite pilot plant at Ogdensburg, N.Y.



From Here, New Pulp Products Here is where Diamond's molded products are made

New Uses Found for Molded Pulp

Diamond Match, with its new Gardner Board and Carton Division, Bauerite plant and research center, is going places

Ogdensburg, N.Y.

Diamond Match Co. is lighting a bright future for molded pulp products. At its new research and development center at Stamford, Conn., and at a new pilot plant at Ogdensburg, N.Y., Diamond is matching its knowhow in molded pulp with a new process for production of a mechanical type pulp.

At the same time, it is effecting better utilization of available forest products, both here in Northern New York and at its \$15,000,000 integrated forest products plant being built at Red Bluff, Calif.

Preliminary studies show an excellent molded pulp can be made from 100% hardwoods abundant in the Adirondacks.

Diamond has been for many years a leader in molded pulp products. At Ogdensburg and Plattsburgh, N.Y., the company produces molded plates for household, picnic, industrial and institutional food service, transfer plates and cake circles for bearies, and a wide range of Foodtainers—Diamond's molded pulp trays used to prepackage meats, produce and other foods sold

in the expanding self-service grocery trade.

The company's acquisition of two leaders in molded pulps—Hartman Fibre Co. in Britain, and General Package Corp. in U.S.A.—and its recent stock exchange merger with Gardner Board and Carton Co. of Ohio greatly enhances Diamond's position in the field of cartons, which it will make from both molded pulp and paperboard. Gardner becomes a division of Diamond, with E. T. Gardner Jr. and Colin Gardner III joining the elder E. T. Gardner, a 14-year member, on the Diamond board.

Based alone on the growing trend toward more self-service supermarkets, and the demand for more eyeappealing prepackaged foods, Diamond sees a big potential for molded pulp products. In 1946, for example, there were less than 100 self-service meat departments. Today, there are over 15 000

At present, annual red meat consumption in the U.S. is around 100 lbs. per person. About 40% of this, or an estimated 7.5 billion lbs. is sold in prepackaged form in self-service stores. This amounts to more than 6 billion packages.

Molded pulp containers are particularly adaptable to meat prepackaging because of their porosity, enabling them to accept seepage without loss of strength or rigidity. This factor permits the meat to breathe, maintaining its "bloom" or "red-meat glow."

Diamond, however, is not concentrating on the food field. At Stamford, Dr. James E. Foote, director of research, is spurring studies for new uses.

Of Promise—Contour Packaging

One promising development he describes as "contour packaging." Electrical appliances, toasters, clock radios, electric light bulbs, small transistors for radios, optical goods, gaskets for metal cans, bottles, fishing reels and machine parts are items that lend themselves to this type of packaging. "Any fragile or brittle products," he explained, "which requires good cushioning protection in transport, is a candidate."

Here, at Ogdensburg, pilot studies are evaluating the new Bauerite process for pulping West Coast Douglas fir and Ponderosa pine and Northern hardwoods.

"This is a pilot plant with commercial equipment and we are using the pulp in our finished product," says Dr. Foote. "We started with a minimum of equipment. As we progress we will add more equipment."

"Starting out with a pilot plant," Dr. Foote explained, "we can put all our energy into a real study without any production pressure. We can shut down and make changes. Already we are getting some good answers.

"Our studies have indicated we can produce a satisfactory fiber from hardwood, which has approximately the same characteristics as that pulp produced from spruce and balsam by conventional grinding. Some data indicates this pulp has somewhat improved strength characteristics."

A Look into Future . .

Pointing to a long line of pocket grinders, Dr. Foote predicted "some day this new process might replace these grinders, since this method permits better utilization of residues."

Karl L. Pingrey, resident manager at Ogdensburg, says that five major sawmill operators in northern New York are vitally interested in providing chips to Diamond. One said he would supply Diamond with "all the chips they can use."

Diamond started up its pilot plant

on Northern spruce and balsam to get some comparative data on West Coast softwoods. Then they "imported" a box car of sawmill slabs from Red Bluff. Results were encouraging. At the Red Bluff plant, sawmill residues will be used for molded pulp products.

Various pre-treatment methods have been used in Diamond's pilot plant pulping, according to Jim Horton, general supt., including soaking in hot water, hot caustic and sodium sulfite. Data on effect of these various pretreatments is being obtained to determine results of this pre-treatment on such properties as strength, brightness, percentage yield and rate of production.

Process Flow at Ogdensburg . . .

After conventional chipping in a D. J. Murray 10-knife, 84-in. disc chipper, chips move on a Goodrich rubber belt on a Jeffrey conveyor and drop to open chip pit. Here an overhanging clam-shell bucket reclaims chips into a live-bottom chip bin.

Chip exit is through an enclosed stainless steel Bauer screw conveyor rising at a steep angle and discharging to another conveyor feeding the input of the primary refiner. Both primary and secondary refiners, by Bauer, are double-disc type with a 400 hp General Electric motor on each disc.

At 9% to 10% consistency, pulp is conveyed to the secondary Bauer, leaving at 3.5% consistency and is diluted to 1% entering the Cowan screens and to 0.5% in Bauer Centri-Cleaners. Consistency in storage is around 3.5% to 4%.

For cleanliness, all piping is either stainless steel or Transite. Controls for pressure and temperature in the refiners are by Mason-Neilan and by Taylor for chest consistency and level.

When commercial scale operations on hardwoods are begun at Ogdensburg, Diamond will probably use caustic soda or sodium sulfite. Hardwoods will be of the Adirondack type; beech, birch, maple and poplar, all readily available locally.

At Ogdensburg, Mr. Pingrey told PULP & PAPER that "millions of Foodtainers are produced every day. Overall production of molded pulp products is about 200 tons daily."

Making Molded Pulp Products . . .

The pulp molding machine has a cylinder which revolves in a vat of the dilute pulp suspension. Vacuum inside the cylinder picks up the pulp. On the cylinder face are wire molds, made out of Fourdrinier wire and pressed into the tray size by Diamond. A pressure head smooths the pulp on the mold; a delivery head takes it off the mold and deposits it on a rotary shoe



Spark Brighter Flame

JIM HORTON (left), general supt., The Diamond Match Co., Ogdensburg, N.Y.; KARL A. PINGREY, resident mgr. (middle) and DR. JAMES E. FOOTE, (right) director of research

which turns it over into an upright position and puts it on an apron leading into the dryers. By the time the trays have completed their cycle through the Merrill type dryers, they are completely dry and ready for packaging.

About Diamond and Gardner . . .

Diamond Match Co. was founded some 77 years ago by a group of match manufacturers, whose production dated back to the first American patents on friction matches in 1835.

Today, matches and woodenware have given ground in importance salesand profit-wise to molded pulp and packaging. In 1956 the latter rose to 31% of all sales, compared to 15% in 1947. Matches and woodenware dropped from 38% to 21% in the same period.

The Gardner Board and Carton Co., now merged as a division of Diamond, is highly research-conscious and has an aggressive management team, says Diamond's President Robert G. Fair-

Gardner's sales for 1956 were \$40,-000,000; Diamond's \$133,716,000. Gardner is a major producer of paperboard and cartons; its subsidiary plants also make papermaking machinery, corrugated cardboard shipping containers, printing engravings and color lithography.

lithography.

Another Gardner subsidiary collects, processes and distributes waste paper stock. Gardner's affiliate, Dairypak, Inc., makes milk containers, dairy product and frozen food containers.

Diamond has 18 manufacturing plants, 8 sawmills, 95 retail stores and lumber yards, two wholesale yards and a new research and development center at Stamford, Conn.

With growing acceptance of molded pulp in the food field, Diamond aims to apply this product to the packaging problems of other perishable or frangible or brittle articles.

What Diamond Sees Ahead For Molded Pulp Products

By JAMES E. FOOTE

Director of Research, Diamond Match Co.

Diamond Match Co. has expended considerable effort on the development and expansion of its molded pulp business. There is every indication that further expansion in this field is possible

Development effort will be roughly divided into two main categories: (1) Development of new products, and (2) studies of raw material used with the objective of improving the quality of the molded pulp items and, also, to make better utilization of raw materials available.



Chart a New Course

ROBERT G. FAIRBURN, (left) president, Diamond Match Co. and COLIN GARD-NER, president, Gardner Board and Carton Co.

Two new products were added to the Diamond line during 1956: Molded pulp plant pots and a molded pulp container for marketing of charcoal briquettes.

The plant pots are being manufactured in five sizes and two grades. One grade is highly fortified with resins and is designed as a reusable pot and replacement for the long-used clay pot.

The second grade is a one-time use item for initial growing of the seedling. The seedling and pot are then transplanted as a unit and the pot is designed to disintegrate rapidly and completely. Both these items are being distributed by the Horticultural Dept. of Bird & Son and have been well accepted by the trade.

The charcoal pack combines cleanliness with ease of use. Because the package is molded, there are no openings through which charcoal dust can leak out and cause the normal, disagreeable condition normally associated with the use of charcoal briquettes. The character of the molded pulp is such that it ignites and burns quite readily. Sufficient pulp has been included in the package so that the burning of the package ignites the charcoal. The inclusion of a chimney in the center of the unit further facilitates this operation.

Small testing quantities of other items have been made. These are mostly for contour packaging of industrial items. Being shaped to fit, it will hold the industrial part securely during shipping and thus prevent damage.

Raw Material Investigation . .

A new pilot plant operation at Ogdensburg for production of a mechanical pulp from chips by means of Bauer disc refiners is an example of work being done on raw materials. Successful operation of a system of this nature will permit production of pulp from mixed hardwood species which are abundant in northern New York where two Diamond molding plants are located.

These mixed hardwoods could be obtained in the form of round pulp-wood or from residues from numerous hardwood sawmills in the Adiron-dacks. This process will also permit the utilization of the sawmill residues from the integrated plant currently being built by the company at Red Bluff, Calif. This program aims to make better utilization of all forest products available. The work to date has given very encouraging results. Its accomplishment will not be easy and the problems are many.

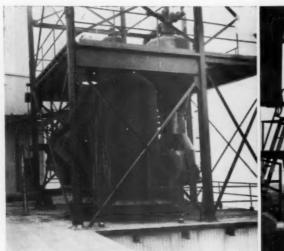
Key Men in Diamond Molded Pulp Work

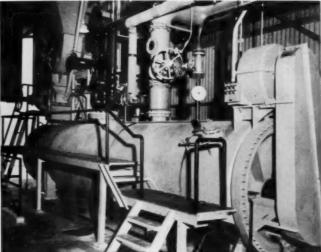
Three key men with Diamond in the work on molded products, are:

DR. JAMES E. FOOTE, director of research, has a ph.d. from the Institute of Paper Chemistry. He worked at Munsing Paper Co. as a chemist, joined Diamond in 1941 as chief chemist. His hobby, he ruefully reports, is taking rocks out of his garden and golf (score: 120) and fishing. He is virtually a commuter by plane from headquarters at Diamond's research and development center, Stamford, Conn., to all Diamond operations.

KARL A. PINGREY, 1933 graduate of New York State College of Forestry pulp and paper course, joined International Paper Co. at Niagara Falls, N.Y.; went to Alfred U. for graduate work, and joined Diamond's Plattsburg, N.Y., division in 1936. After discharge from the army he went to Ogdensburg as pulp supt., then was general supt. and now is resident manager.

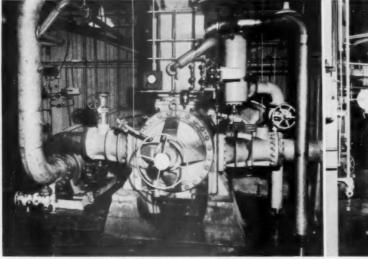
JIM HORTON, general supt., is a chemical engineering graduate (1949) of Clarkson College, joined Diamond's Plattsburg operations as chemical engineer in development. He is 32, 6-ft, 4-in., a pro at golf, and is president of the Ogdensburg Country Club.

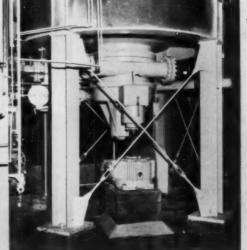




One of First in America

(Left) Top of Kamyr continuous digester at Longview, with hour-glass shape blowtank (at right) and digester built by Chicago Bridge. (Right) Low-pressure steaming vessel through which screw conveyor takes metered chips before entering digester. This presteaming is first processing step. Chip meter and feeder at top left.





(Left) Kamyr high-pressure feeder (center) receives pre-steamed chips which are ejected from rotor barrel by recirculated liquor delivered at 165 psi by Bingham top circulation pump (left). Liquor and chips charged into continuous digester through stainless piping (right) fabricated by Alaska Copper. (Right) Ground floor discharge of Kamyr continuous digester with bottom scraper drive shown beneath Chicago Bridge digester and automatic air-operated blow valve at left below discharge line leading to liquor strainer.

PULP & PAPER'S

Picture Story of Unusual Unit

Within 3 days of startup, it "was clicking along at 100 tons (daily design capacity), reached 110 within week."

-Mill Mgr. E. N. Wennberg.

First Kamyr continuous digester on Pacific Coast—the second in U. S.—is in production. It is the cooking component for Weyerhaeuser Timber Co.'s 100-ton Pulp Division expansion of kraft board at Longview, Wash., under supervision of Hugh A. Wickett, sulfate supt.

The attending Swedish engineers representing Kamyr called it "the sweetest start-up" they had seen.

The Kamyr pulper, purchased from Kamyr, Inc., through A. H. Lundberg, Inc., was the final prime component to be completed in the current expansion project bringing capacity of

the Longview Pulp Division to 1,100 tons per day.

Earlier in the year No. 3 machine—installed in 1952 with 250-ton capacity to produce bleached paper-board—was increased to 350 tons by adding 20 more Beloit dryers and upping the forming capacity of the Fourdrinier by re-arranging suction boxes and installing a Rotabelt. The plant's third kraft recovery boiler—No. 5, the other two for MgO sulfite, came into production in February. General enlargements have been

General enlargements have been completed in various other mill sections as part of the current expansion.

Highlights from Empire State TAPPI meeting at Lake Placid



How New York State Regulates Its Streams

W. H. LARKIN, N.Y. State Pollution Control Board, told Eastern Dist. N.Y. Empire TAPPI, the rules in their state. Here's what he said about . . .

How the Rules Operate

"It is declared to be the public policy of the state of New York to maintain reasonable standards of purity of the waters of the state consistent with public health and public . . the propagation and enjoyment. protection of fish and wildlife, including birds, mammals and other terrestrial and aquatic life, and the industrial development of the state, and to that end require the use of all known available and reasonable methods to prevent and control the pollution of the waters of the state of New York."

So reads the declaration of policy of the water pollution control law or article 12 of the state of New York.

"All waters have to be classified (like zoning)," Mr. Larkin said at Lake Placid meeting. He listed:

AA-Best usage of waters: for drinking, culinary or food processing, where only treatment would be disinfectant.

A-Public water supply purpose

B-Bathing C-Fishing

D—Industrial or agricultural. Must be suitable for fish survival. Dissolved oxygen to be not less than 3.0 ppm; pH range between 6.0 and 9.5. Toxic wastes—none alone or in combination with other substances in sufficient amounts or at such temperatures as to prevent fish survival or impair waters for agricultural purposes or any other best usage determined for the specific waters designed for this class.

E-Transportation, sewage or industrial wastes. No odor producing substances in sufficient amounts to cause a public nuisance as defined by the Penal Law.

F-No better use than for disposal of wastes.

Pre-classification procedure: Waters of the state are surveyed as to capacity to recover, present and future uses, etc. Public hearings are held. Classifications are then published. Only then can it be determined what violations exist. Next step is to arrange district conferences with municipality heads and industry representatives to arrange a program. If it isn't followed, civil action is next—first a public hearing, then the board may issue an order.

The responsibility of classification rests with the Board. Sections of the same stream may have different classifications. In practically every case, remarked Mr. Larkin, there is a conflict of interest. Each case must be resolved to meet the best interests of the community or the most people.



What Using Hardwoods Means for St. Regis

ROBERT F. CASWELL, St. Regis Paper Co., presenting his entry for Empire State TAPPI Junior Award, told how St. Regis learns to live successfully with hardwood. He explained that . . .

"It Lowers Production Costs"

Since Nov. 1956, St. Regis Paper Co. has been in commercial production of hardwood sulfite pulp. Production costs have been reduced 5 to 13%, Bob Caswell, of Deferiet, told Empire TAPPI.

About 18% hardwood sulfite is used. Species include maple, birch and beech, obtained locally from farmers and from St. Regis lands. Hardwood and softwood are processed separately. Wood from the company's own lands is chemically peeled so that the bark remains on the lands.

Some excerpts: Hardwood dirt content is about twice that of softwood, necessitates higher chlorine requirements. Cooking time averages seven hours in a 4,600 cu. ft. digester.

Why More Automation

How well and how fast can you do something about it when your sensing instruments for paper machines indicate a deviation from standards?

Empire TAPPI heard these reasons for better instrumentation:

The trend is to larger and faster machines. This puts more rigid specification on more precise control of paper.

The trend is toward rotary type printing.

Larger diameter rolls limit end of roll samples.

Lighter weight papers give more problems.

There is a substantial need for continuous testing.

The current problem in papermaking is variability—from roll to roll; within a roll, skid to skid and within orders.

Discussing these points, Frank Lappnow, Kimberly-Clark Corp., said bench type controls now limit the amount of control one can do. The demands of customers will require greater controls.

Gums As Wet End Additives

Arthur M. Goldstein of Stein, Hall & Co., Inc. reported on the use of natural gums in the paper industry, a use which has grown (as wet and additives) from less than one million pounds to around 15 million lbs.

Excerpts: Karaya gum: About 500,000 lbs. used per year. Use is confined to long-fibered lightweight papers such as condenser tissue and fruit wrap tissues. This is the least important, economically, of gums used in the paper industry.

Most important is the galactomannans group which amounts to about 14 million lbs. per year. Two important members are the locust bean gum and guar gum. Both are derived from endosperm of seeds of leguminous plants. Locust bean trees are grown in the Mediterranean regions of Europe and Africa. Guar is an annual plant, is grown commercially in India, Pakistan and Southwestern U.S.

Typical uses: for kraft test liner board, a cooked galactomannan product is used. Rates of addition: 3 to 10 lbs. of gum per ton. Reason for use: as an additive to increase bursting strength at usual machine speed or to maintain mullen at higher machine speeds. Also serve as medicine in poor pulps from old wood or poor quality trees. Increase in bonding strength results largely from the efficiency of the galactomannans as hydrogen bonding aids.

Bogus corrugating medium: Rate of addition: 7 to 13 lbs. per ton. Many mills use starch as combination ad-

ditive. An increase in the flat crush value of the medium is sought through improved formation and greater retention of fines.

Boxboard: Both cooked and dry additives are used at rate of 5 to 10 lbs. per ton. Gum is added to achieve improved ply bonding and improved wax pick in the top liner. These are gained by improved formation and internal bonding.

Offset grades: Cooked galactomannan in combination with starch at rate of 3 to 7 lbs. per ton. Improvement in formation and internal bonding result in higher pick values.

Filler retention: Some techniques include addition of gum to tray water, or to filler slurry which is then added at fan pump,



What Does a Mill Town Boy See in This Industry?

NORMAN MOSHER (left), is congratulated for winning Eastern District, Empire TAPPI contest—discussing this subject. To his left: GORDON NICHOLSON, West Va. Pulp and Paper Co.; BOB BLAKESLEE, Imperial Paper & Color Corp., and his father, KEN "SKINNY" MOSHER, chief scaler, International Paper Co., Corinth, N.Y. Here's how Norman answered the question. . . .

"It is Part of My Heritage"

This was the answer of a young man brought up in a mill town and who has earned a half dozen scholarships, including one from General Motors.

Norman Mosher of Corinth, N.Y., told Empire TAPPI at Lake Placid, N.Y.:

"I consider a future in the paper industry to be a part of my heritage. I live in a town whose paper mill is employer of the largest portion of the population; probably over a hundred of my relatives work there. My father has worked in this mill for over 35 years; both my grandfathers were employed there until they were past 70.

"I shall finish high school this year and expect to attend college for a b.s. degree, probably in chemistry. This means my opportunities will lie in research or process control—possibly some field not even existing today. I shall have every chance to do the kind of work that I will enjoy.

"Automation is becoming an important factor in this industry. The ever increasing use of machinery and automatically controlled operated equipment means that relatively fewer unskilled workers will be needed in tomorrow's industry. It will require many more engineers, designers and skilled technicians."



In Demonstrailer, compact look at instruments . . .

Exhibits Log Many Miles

Exhibits featured at Lake Placid for Empire Section TAPPI men were Fischer & Porter's Demonstrailer (a luxury-sized trailer), equipped with the company's line of equipment, and Thwing-Albert's mobile unit. Latter is in effect a mobile laboratory-equipped with a host of equipment and instruments for paper testing. It can even be hooked up to a water line to run the pulp classifier.

T-A's trailer (piloted and manned by Don Smith and Don Ratayski) has logged some 50,000 miles, visited paper mills and schools in some 25 states. The two Don's usually lecture on instrumentation for paper mill personnel and run tests.

From the outside the Fischer & Porter mobile demonstration unit is impressive. The six-wheeled trailer with its tractor cab measures 45 ft. in length and weighs 3,500 lbs. The trailer itself is 8 ft. wide and is finished in shining stainless steel. Entrance to the trailer is by portable steps such as are used by airlines. Inside the trailer the visitor sees an array of instruments on three of the four walls. Wall-to-wall carpeting is underfoot.

The trailer is self-powered. A 65 hp 6 cylinder gasoline engine drives a 15 kw generator for electrical power which, in turn, operates the 5 ton air conditioner and the 6,600 watt electric heater, as well as the lighting system. Pumps, tanks, and tubing circulate liquids and compressors furnish the air pressure required for the

operation of certain instruments.

From New York State the trailer will head westward, crossing the country. Arrival at some point on the Northwest Coast is expected about Oct. 13. From this point the trailer will drop southward to California and then proceed eastward, touring the Southern states.



Celebrate 21st Birthday

. . . of Empire State TAPPI at Lake Placid. From left, seated, are GRANT G. COLE, next year's chairman, Finch, ruyn & Co., Inc.; J. WAYNE MORROW, 2nd vice chairman, Newton Falls Paper Mill; JACK C. RICE, 3rd vice chairman, Lowe Paper Co. From left, standing, are ROY SULLIVAN, new seey.-treas., Monsanto Chemical Co.; RALPH N. PRINCE, retiring secy.-treas., F. C. Huyck & Co., and GORDON K. STORIN, chairman, International Graphite & Electrode Corp., Niagara Falls, N.Y. (formerly with Hooker Electrochemical Co.).





Empire TAPPI Chairmen

(Top) Mr. and Mrs. BILL WILLETTS, Titanium Pigment. He is past chairman of the section; (bottom) Mr. and Mrs. GORDON K. STORIN, 1957 chairman, formerly with Hooker Electrochemical has just joined International Graphite & Electrode Corp.

Kimberly-Clark Starts New No. 5 at Kimberly, Wis.

William R. Kellett, executive v. p., Kimberly-Clark Corp., touched a button July 5 to start up a new 185-in. 190-tons-per-day Fourdrinier machine at the Kimberly, Wis., mill to make on-machine double-coated book paper. Design capacity is 2,000 fpm.

It is 425 ft. long, twice as long as the machine it replaced, has a totally enclosed aluminum hood and is served by a 175-in. supercalender.

New auxiliaries include what is described as a "unique" clay and fiber recovery system, a new groundwood bleach plant, rebuilt repulping unit, blending system for five kinds of pulps, new coating plant, new roll grinder building and additional power.

Kimberly-Clark Installs **Faster Cooling Machine**

Kimberly-Clark has installed and is operating a faster and more efficient coating machine at the Munising, Mich. mill. Known as No. 14, the new machine runs about 400 fpm and handles paper up to 62 in. wide. Dept. Supt. Larry Murray says it will coat shelf and drawer lining, adhesive veneer, plastic coated and other specialties

W. R. Beerman became mill manager at Munising on Apr. 1. As plant engineer, he and his staff had carried out design and engineering of the new coater.

How Kimberly's Old No. 5, **Built for Russia, Ended Runs**

Kimberly-Clark really got the last pound of paper out of an old machine, as work went on in preparation for the successor to No. 5 machine at the Kimberly, Wis. mill.

KC's magazine "Cooperation" tells how the foundation for a new machine, a new roof and auxiliary equipment were installed under, over and around No. 5, until it was finally stopped, dismantled and put under storage wraps with all parts marked, photographed and identified-possibly for future use somewhere.

No. 5 made more than 600,000 tons of paper in 36 years-book paper, coated book paper, Western Union paper, pulp and resin-impregnated

Built originally for Russia by Pusey & Jones, it never got there because of lack of shipping space in 1920. Whenever K-C papermakers got mad at her, they would say: "She shouda kept on going to Russia."



Ten Years Safety Record

R. W. WORTHAM, JR., executive vice president of Southland Paper Mills, (right), presents a congratulatory letter to (l to r) GEORGE JOHNSON, safety director for the company, ROGER GETCHELL, asst. to Mr. McCollough, and JOHN L. McCOLLOUGH, supt. of cylinder machine dept., on observance of the department's tenth year without a lost-time accident (over 614,000 man-hours).



Oregon Mill Wins Honors

SIDNEY M. COLLIER (right), mgr. of Spaulding Pulp & Paper Co., Newberg, Ore., receives state merit award presented to firm for exceptional in-plant program reducing injury frequency (2.99 in 1956; 3.00 in 1955) below prevailing rate for industry. Key participants at this first annual safety dinner (I to r) Spaulding Safety Dir. WM. S. TIGER, guest speaker; R. R. BLANTZ, Portland General Electric Co., D. G. BENE-State Industrial Accident Commission, C. R. SULLIVAN, president, Local 358 IBPS&PMW



New Assignments for Three

(L to r) W. H. TOCK, named assistant (L to r) W. H. TOCK, named assistant to chief engineer of Basic Inc., 845 Hanna Bldg., Cleveland 15, O. He specialized in rotary kilns for 16 years for Allis Chalmers Mfg. Co. and will handle engineering and development of special kilns for Basic. He graduated from U. of Wisconsin in 1935.

HALDANE Y. WILSON, formerly asst. gen. mgr. of Container Corp. of America's folding carton plant and paper mill in Chattanooga, Tenn., is now gen. mgr.

in Chattanooga, Tenn., is now gen. mgr. of both operations. He joined Container Corp. in 1941 after graduating from

Yale U.
DAVID R. DALZELL, JR., is promoted to chief engineer of E. D. Jones and Sons Co., Pittsfield, Mass. A graduate of the U. of Vermont, he has been with E. D. Jones since 1950, serving as draftsman, laboratory asst., chief draftsman and since last Aug., product engineer i/c beating and refining control.







3 Sales Mgrs. for Albany

3 Sales Mgrs. for Albany
(L to r) JOSEPH E. TANNER, RAYMOND P. DUSTRUDE, and CLIFFORD E. VAN BUREN, newly appointed district sales managers for Albany
Felt Co. Mr. Tanner, with Albany since
1944, received the National Sales Executives "Oscar" for being the company's
most outstanding salesman of 1956. He
will headquarter in Albany and supervise
territories covered by J. F. Howell, E. F.
Hyde, B. Owre, F. McGrath and L. Lane.
Mr. Dustrude, who joined Albany in
1945, will have charge of territories covered by L. Brown, G. Page, W. Schaffner,
E. Paca and C. Hendricks. He will continue in Albany.
Mr. Van Buren, a veteran of 34 years

Mr. Van Buren, a veteran of 34 years service will supervise Midwest territories of C. R. Spellman and R. Gordon, He headquarters in Kalamazoo, Mich.



Air View of the New Southland . . . Since Plant Additions

Special Field Report—Photos and Text By PULP & PAPER

The Newsprint Gamble That Paid Off

It took daring and faith to build Southland Paper Mills but the million-dollar dare revolutionized the industry

• It is Jan. 24, 1934, and you are attending the annual Canadian Pulp & Paper Association meeting. A. A. McDonald, then chief engineer for Price Bros. & Co., Ltd., is delivering a warning.

"Research carried on by the state of Georgia over the past two years in the Savannah laboratory (Herty) on the pines of the Southern U.S. appears to indicate that the undisputed position which Northern woods have held in the newsprint field may soon be seriously challenged. It is well to remember that 15 or 20 years ago the North, including Canada, was making practically all the kraft paper for this continent, and the South was experimenting with their pine woods for the same market . . . If our important industry is to withstand the serious threat of Southern competition, action had best be taken before Southern mills are built-after that it will be

The fact that the South has and is challenging the position of Canada and the North as a producer of newsprint is now history. And the dawn of that era came on a Tuesday morning, Jan. 23, 1940, in Lufkin, Tex.

What Headlines Said . .

The Lufkin Daily News that day headlined several events—"Mercury Plunges To 10 Here"; "Frugal Solons Trim New Millions Off FDR Requests"; "Tears Fall At Borah (Idaho's Sen. William Borah) Rites"; "Earl Browder Draws 4-year Pen Term." But the most significant headline as far as the paper industry was concerned was in the middle of the front page:

"This issue printed on Southland newsprint." The story under it told briefly that the day's newspaper had been printed on the first roll of newsprint to come off the Southland Paper Mill's machine. Beside it were pictures of that all-important roll coming off the winder, being rolled into a truck and being delivered to the newspaper.

On that day the challenge began. Research, carried out by the late Francis P. Garvan, aggressive head of the Chemical Foundation, Inc., New York, and the late Dr. Charles Holmes Herty, eminent scientist and authority on chemical properties of pine, began to pay off. The first newsprint to come out of the Southland mill was hardly

of a quality to worry Canada or anyone else. Today the story is different.

A few weeks ago, PULP & PA-PER's Southern Editor was chatting with one of the first newspaper publishers who signed contracts with Southland.

"Listen," he said, "that first paper we got was kind of rough. So okay, we expected that. Thing was, some of us were willing to gamble on a few rolls of poor paper for what was coming in the long run. It was worth it. I'll put Southland's product up against anybody's today. And some of the boys who turned down the chance to get in on the ground floor back in '40 are crying in their beer today. They'd cut off an arm to get hold of some newsprint from here. It's first come, first served . . . and we were first."

How Founders Got Together . .

While surveying the South in 1934, Lou Calder, president of Perkins-Goodwin Co., met Dr. Herty, who for some time had been experimenting with making newsprint out of Southern pine, and insisted that it could be produced on a commercial basis. A short time later Mr. Calder met Mr.







LOU CALDER, president of ERNEST L. KURTH, president of Southland Paper Mills, Southland executive vice pres. urer.



Garvan, president of Chemical Foundation, Inc. of New York, who had helped to finance Dr. Herty's semicommercial laboratory at Savannah as part of the Foundation's program to develop the chemical industry in America and to make this country self-sufficient through the proper utilization of its natural resources. Mr. Garvan realized the important part that Southern pine could play in the industrial expansion of the South.

Dr. Herty and Mr. Garvan convinced Mr. Calder that the idea of making newsprint out of Southern pine was a sound one. Numerous efforts had been made to finance a newsprint mill in the South. The most promising plan was initiated in 1934 when a committee for this purpose was appointed at a Southern Newspaper Publishers Assn. convention, and many able men devoted time and money to further this plan but they were unable to carry it through.

On Apr. 28, 1936, Mr. Calder first met Ernest L. Kurth, prominent Texas lumberman and industrialist, in New York City. As chairman of the East Texas Chamber of Commerce, Mr. Kurth had been working on the further development of the natural resources of Texas and was keenly interested in having a newsprint mill built in that state.

Mr. Calder and Mr. Kurth made a good team. With the help of many able men, they took the hurdles one by one as they came along. Perkins-Goodwin, having absolute confidence in the venture, sent engineers and mill experts to make a complete survev of the South to select the best possible location. Among them were Mr. Calder, Al Newcombe, Dick Wortham, George Hardy, consulting engineer, and Gwin Whitney, president of Merritt-Chapman & Scott, later in charge of construction. Twelve sites were surveyed as to availability of wood, water, transportation, fuel and labor-and, after long study, Lufkin was selected.

This choice was dictated by the

Key Men at Southland



Finishing Supt. N. T. BERGOUIST (left) and COVER PORT-ER, asst. to mill mgr., inspect a sheet newsprint.







(Left to right) FRED W. BISHOP, technical director; A. E. DREW, chief engineer; J. J. THOMPSON, supt., kraft pulp mill; J. L. McCOLLOUGH, supt., board mill.









(Left to right) D. C. EDMISTON, general supt, of maintenance; L. G. PELKEY, Supt., groundwood mill; V. M. WILLIAMS, supt., power plant; H. A. COOKE, chief elec-



From atop 3-story Water Tower, P&P's Southern Editor took this Picture of Southland Paper Mills

fact that all the essential ingredients for making newsprint were abundantly available in Angelina County, East Texas, often called the "Lumber Empire of Texas.

Eventually Southland Paper Mills, Inc., was organized and Mr. Kurth was elected president and a director. Perkins-Goodwin accepted for its outof-pocket expenses and services, common (bonus) stock which would be worthless unless the new mill were a success. It contracted to act as exclusive sales agents for a long term.

Success . . . Today, Southland has pushed its production to the 600 tons a day mark and is planning a fourth machine which will shove its annual production to 300,000 tons. The success of the Southland venture paved the way for the Southern newsprint industry and gigantic enterprises which followed at Bowaters in Calhoun, Tenn., Coosa River, Mobile and now Pine Bluff.

Among the original publishers to

show interest in Southland were Adolph Ochs, of The Times at Chattanooga, Tenn., later of the New York Times, Scripps-Howard's William G. Chandler and John S. McCarrens of the Cleveland Plain Dealer.

Dr. Herty, who put his reputation on the block in the Southland venture, didn't live to see his dream come true. Dr. Charles Carpenter, who worked with Dr. Herty at Savannah, became technical director at Southland and rendered valuable assistance in the initial operation of the mill. Because of the initial efforts of Dr. Herty and Mr. Garvan, Lufkin was picked as the site for the mill over Beaumont (later this was almost the same site chosen by East Texas Pulp & Paper Co.) and Texas City (where disaster wiped out the city six years later). The mill was built in a cotton field and in Jan. 1940, its 234 in. Fourdrinier machine began turning out news at 150 tons a day.

For his part in the building of Southland and for beating the bushes all over the Southwest to raise money

for the mill when many of his business colleagues thought he was foolish, Ernest Kurth was named Man of the Year in the South in 1949 and columns on columns in magazines like Time. Colliers, Business Week and even the Congressional Record, have been devoted to telling the dramatic story of this Southern newsprint pioneer.

Others in Key Roles

Others who played key roles in the story are R. M. Wortham, Jr., exec. v.p.; W. L. McHale, vice pres. and mill mgr. till his recent death in May; K. W. Cooke, sec.-treas.; C. W. Medford, asst. sec. and Cover Porter, asst. to mill mgr., who has assumed many of the manager's duties since Mr. Mc-Hale's death; Louis Calder, Jr., Perkins-Goodwin, vice pres.; Edward Mc-Sweeney, v.p. and treas. of P-G, and Lloyd Schenck, vice pres. of P-G's Southland division.

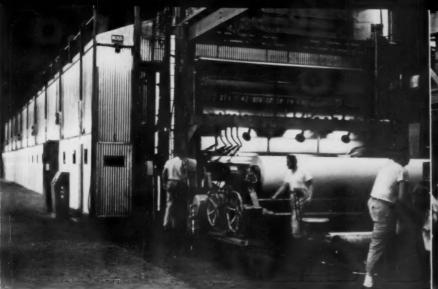
Southland's growth has been steady and dramatic since the mill startup. In Jan. 1944, a kraft pulp mill with capacity of 175 tons a day, including a bleach plant, was constructed. Until that time, bleached kraft necessary for newsprint production had been purchased. A second newsprint machine was added in March 1948, which, with other improvements made at that time, boosted production to 400 tons a day. Pulp drying machine was also converted to produce about 70 tons a day of bleached board.

Southland's third machine is now operating smoothly at 2000 fpm and total production has passed the 600 tons a day mark. This is the story of the No. 3 machine and recent changes made at Southland to boost its production to this new high.

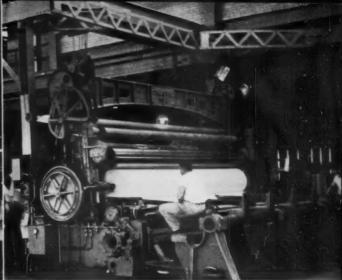


With Southland Since No. 1 Started Up

These are 25 year men (l to r): PAUL BELANGER, BILL BESNER, MEL PICK-ERING, JIMMY LABAR and GENE COTY.



Smallest in Trim—But Boosts Production 50 % New Pusey & Jones 212 in, Fourdrinier machine at Southland Paper Mills,



At Dry End . . . Pope-type Cameron winder slits and rewinds 42-in, rolls at 5,000 fpm.

How Southland Revamped With No. 3

More than just adding a machine and auxiliary equipment
—Southland did a lot of face-lifting in this expansion

• Key to Southland's \$15 million expansion is the 212 in. Pusey & Jones Fourdrinier machine which boosted its production nearly 50% when it began operating last year. Southland executives used this new addition as an opportunity to make other changes in the mill which had been on the agenda for some time.

The bleach plant got a face-lifting and the mill went from sodium hypochlorite bleaching to the chlorine dioxide system. There were other changes,

A new pH control system developed by Southland's alert technical director, Fred Bishop, was installed, motor control centers were equipped with dust filters to keep sodium and other dusts from settling around big drives, the woodyard was almost completely overhauled and a new system of routing wood was put into play (see Pulpwood Section).

Power Plant is "Souped Up"

Major additions were made to Southland's power plant, where all power necessary to operate the big mill is produced. Two new General Electric turbogenerators boosted the rated capacity of the mill to 71,250 kva. These new generators, added to the four smaller ones, are set up with a synchronized bus so that if any one of the six generators goes out of service its full load can be drawn through the bus from the other turbines in the system. The new turbines operate at 590 psig, 750° F, with single automatic extraction at 30 psig and a con-

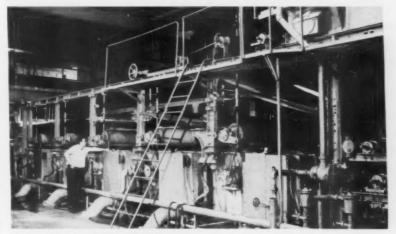
denser pressure of 3 in. hg.

Two new Babcock & Wilcox boilers were also added to continuously produce 175,000 lbs. per hour of steam at 610 psig. These integral furnace boilers are arranged for pressure firing with natural gas and do not have induced air fans—they operate forced draft fans only. The steam plant now has seven gas fired boilers and one combustion recovery unit with combustion and feedwater controls by Bailey Meter Co.

How Groundwood is Handled . .

Groundwood, which is the select wood taken from aprons at the woodyard, is delivered to one of six bins located behind the grinder lines by a 32 in. Goodrich belt operating through a traveling belt trolley. It is removed from bins by a plow and delivered by one operator at each of the three grinding rooms to the delivery apron.

In the new grinder room, wood comes from the bins on a single transverse chain conveyor and is delivered to a Jeffrey apron conveyor from which it is dumped by hand into the grinders. The ten new grinders are Montague Machine Co. Great Northern type with 54 in. x 67 in. Norton Co. stones operating at 240 rpm. The sixteen older grinders have 54 in. x 62 in. stones running at 200 rpm. Comparatively, the older grinders produced



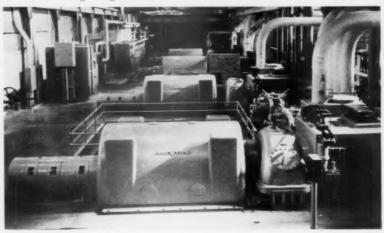
Converted to Board Machine

Five-cylinder 124 in. Moore & White machine was once a pulp dryer, was converted into 70-ton-a-day board machine in 1944.

about 20 tons a day while the new ones are making more than 25 tons. Total groundwood production capacity is about 550 tons a day. The new grinders are equipped with Meyers governors and the latest type hydraulic and automatic equipment. They are driven by 5,000 hp Electric Machinery Mfg. Co. synchronous motors, one motor serving two grinders in tandem. The motors are housed in dustproof room and space has been pro-

strong from and space has been provided for sixth line if necessary.

Stock from the grinders flows through several bull screens arranged in parallel. Accepted stock then flows through rifflers to chests and pumped to Cowan fine screens, eight in all, three of which are new. Rejects from both bull screens and fine screens are



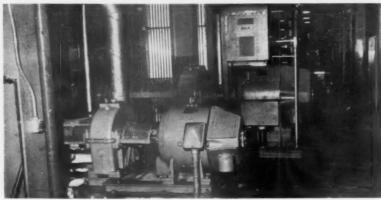
New Turbines

Boosting rated capacity of mill to 71,500 kva, these two General Electric turbines were part of \$15 million expansion.



Suction Pumps for New Machine

Nash Hytor pumps serve the new machine



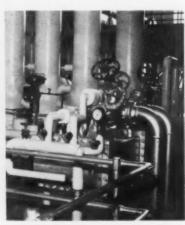
Drives for Machine

In foreground, Reliance Electric & Engineering motor, through Lufkin gear reducers, drives calender stack. Behind it, larger set-up pushes last of dryer rolls.



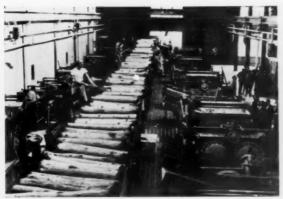
Southland's Fifth Digester

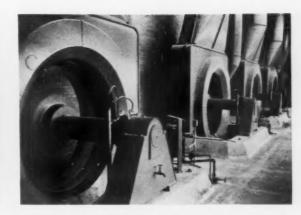
New 2,700 cu. ft. Wyatt digester has direct steaming system and Foxboro automatic controls.



A Mill abounds in Valves

Crane valve system adjusts gases from air ejector to new Babcock & Wilcox boiler.





In Grinder Room

(Left) 10 Great Northern-type grinders make 250 tons a day of groundwood pulp. (Right) 5,000 hp Electric Machinery grinder drives are in dustless room.

routed through refiners so that they can be reclaimed as groundwood pulp.

Bull screen rejects go through a 36 in. Bauer revolving single disk refiner which discharges into a tank where rejects from fine screens are added. These combined rejects are then routed over Allis-Chalmers Low-Hed vibrating screens for dewatering application before being discharged into an agitator-equipped tank. From here, rejects are pumped through a DeZurik consistency regulator at 2% consistency into a 40 in. second stage double revolving disk refiner by Bauer Brothers equipped with a Foxboro Powerator and 400 hp, 1200 rpm motor. From the retaining tank, below the second refiner, they are processed through a third stage refiner the same size as the second and the refined rejects are then sent to two centrifugal fine screens. Accepted stock, after being thickened on an 8 ft. x 16 ft. Impco vacuum decker with Oliver-Denhard dischargers (rubber covered rolls for couching and a screw conveyor for discharge), is blended with groundwood pulp from the grinders.

As part of the new expansion, three 9 ft. x 16 ft. Impco stainless steel vacuum savealls have been provided, one

for each machine. Two existing savealls now serve as deckers for groundwood and refined rejects stock. New Stebbins tile chests have been provided for saveall, broke and thickened stock storage. Stock chests have complete liquid level control,

Semi-bleached kraft is pumped through a Trimbey consistency regulator from the bleach plant to another tile chest in the stock prep room. From there it is pumped without refining directly to the proportioners. Groundwood pulp which has passed fine screening goes to one of three 9 ft. x 16 ft. Impco stainless steel vacuum deckers before it is delivered to storage.

Few Changes Needed . .

To provide the necessary kraft stock for this expansion, a new 2700 cu. ft. Wyatt digester fabricated from A285 firebox steel has been added to the existing four digesters. The new digester has complete automatic cooking controls by Foxboro and Fibre Making Processes system for direct steaming. The digester has a Yarway blow valve, 1% in. shell and cone and 12%2 in. head. According to Pulp Mill Supt. J. J. Thompson, Southland expects to

standardize on Yarway valves.

Additional evaporator capacity has been obtained by converting the existing four-body, four-effect Goslin-Birmingham evaporator into a six-body four-effect system. A second line of 8 ft. x 12 ft. Impeo brown stock washers was added as well as a new Bird centrifugal thickener to handle mud going to the lime kiln. No other changes were necessary in the kraft mill.

Complete Overhaul of Bleach Plant

With the installation of the new machine, Southland took the opportunity to completely revamp its bleach plant. The third and fourth sodium hypochlorite stages were taken out and chlorine dioxide is now used. One unique aspect of the bleach plant operation is that the chlorine dioxide generator is remotely controlled from the operating floor of the bleach plant.

Chlorine dioxide is generated from the latest Solvay type two reactor system with the reactors in series without recirculation. Three net tons of ClO_a are made per day in the plant, located below the bleach plant in a separate building. Remote controls by Minneapolis-Honeywell in the bleach plant





After Refining . . .

(Left) Thickening of groundwood stock for all machines is by Impco deckers. (Right) Closeup of new decker shows rubber roll and screw discharge.

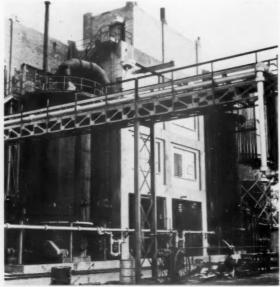
enable operators to control the chlorine dioxide plant from the bleach plant operating floor.

Pulp is bleached in three or four stages. Some 70% (160 tons a day) is removed after third stage and goes to a reinforced high density storage chest since high brightness is not necessary for news pulp. The remaining 75 tons goes through the fourth stage bleaching and is used for the cylinder machine in production of bleached food-

Existing chlorine and caustic stages are being reused. Both have 8 ft. x 10 ft. rubber lined washers. The chlorine tower is 16 ft. x 45 ft. and the caustic tower is 14 ft. x 38 ft. Pulp is run through the chlorine stage at low density but caustic and chlorine dioxide stages are at high density. The new chlorine dioxide tower is 16 ft. in diameter and is of steel construction by Chicago Bridge & Iron. It is lined with 3/16 in. membrane of Latex-Lumnite cement compound and Sarancote plus 3 in, of acidproof brick set in polyester resin cement. The third stage washer is 8 ft. x 12 ft. and is made of type 317 stainless steel. The fourth stage washer is 5 ft. x 10 ft. with submerged parts protected by stainless steel. Storage tower for fully bleached kraft is only about one-third the size of the semibleached tower since capacity is not as great. One is 28 ft. x 36 ft.; the other, 13 ft. x 35 ft.

The New Machine . . . Furnish for the 212 in. Pusey & Jones Fourdrinier is a mixture of semibleached kraft pulp, groundwood pulp and broke. About 75% of this is groundwood pulp. Pulps are metered through a 300 ton stainless steel proportioner into a reinforced tile stock chest. The furnish is pumped through a pressure type consistency regulator and a remote-operated metering valve to the wire sump pit from which the fan pump pulls it. The 15,000 gpm fan pump discharges the mixed pulp through six Shartle Selectifier screens and a streamflow valve to the aircushioned pressure headbox, supplied by

Actually the new machine is the smallest of Southland's three. One other Pusey & Jones machine has a 238 in. wire and the Bagley & Sewall machine has a wire width of 238 in. The new machine has a 212 in, wire trimming at 198 in. Designed for 2,000 fpm the machine has been running smoothly at that speed. The nonshaking Fourdrinier has a flat deck from the breast roll to the couch and no provision for pitch adjustment. It



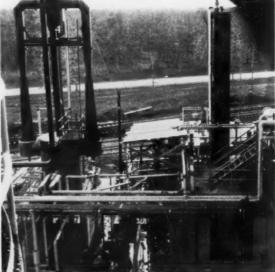
New Bleach Plant Rises Three Stories

Behind maze of pipes from chlorine dioxide plant. At left is high density storage for semi-bleached kraft which goes to high density storage for semi-bleached kraft which goes to news machine. At right, fully bleached storage for board,



Heart of Bleaching Operation is Here

Instrument control center on operating floor of bleach plant. From it, both bleach plant and ClO₂ plant are controlled.



Remotely Controlled CIO: Plant

Seen from doorway of control room, Solvay process is used to manufacture chlorine dioxide,



For Board Mill

High brightness fully bleached kraft moves quietly through dark passage on way to cylinder machine.

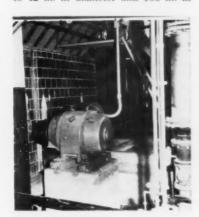
is stainless steel covered as are the saveall pans from the breast to couch roll and is equipped with ten 7 in. wide suction boxes with hydraulic oscillation and a 44 in. suction couch roll with a 10 in. wide suction box. The couch drive roll is 34 in. in diameter.

The new "Rapi-drape" wire handling device enables operators to change the wire from the tending aisle without removing the Fourdrinier proper from the normal operating position or detaching the brace stands, suction boxes and showers.

The press section on the machine uses a vacuum pickup and three suction presses. The pickup roll is 30 in. diameter and the transfer press has a 38 in. diameter bottom roll. The upper transfer roll wringers have 30 in. suction roll and 30 in, rubber covered top roll while the two main presses are equipped with 38 in. bottom roll and a 32 in. top granite roll. Machine has 53 main paper dryers, a sweat dryer and eight felt dryers with forced vapor circulating system for the dryer section with Foxboro Dynalog automatic moisture control. The calender stack has a 34 in, bottom roll, 22 in. second roll and six 16 in. intermediate and top rolls.

The machine is driven by Reliance Electric & Engineering Co.'s Harland type sectional drive through Lufkin Foundry & Machine Co. herringbone reduction gears which are designed for stable operation from 900 to 2000

Machine is also equipped with a uniform speed Pope reel with a 42 in. diameter, 214 in. main drum which will reel paper rolls up to 68 inches. The high speed winder by Cameron is designed to slit and rewind rolls up to 42 in. in diameter and 196 in. in



Thrashing Broke

Agitator in bottom of E. D. Jones & Sons Brokemaster is capable of handling full production of machine. Brokemaster is fully automatic, has electric eye to control water, chutes leading from last dryer, calender, reel.

trim width at about 5000 fpm. A Beloit tension control regulates the unwind brake.

Brokemaster is "Eye-Controlled"

The E. D. Jones & Sons Brokemaster is located under the calender stack and has automatic electric eye controls which turn water off and on. Chutes carry the full width of the sheet from the last dryer, calender stack or reel and winder trim is blown into the pulper. Slabs from the unwind are thrown in at the reel opening. The Brokemaster is designed to handle full machine production up to 10 tons an

Latest Type Enclosed Hood .

The Ross Engineering Hood is totally enclosed with the hood extending into the basement. Telescope-type panels permit entry on the operating floor, and a door in the dry end permits entry without raising the hood. Ross provided economizers for the felt drying air supply which is fully automatic-controlled. High pressure calender air system is also provided with mechanical refrigeration equipment and the latest equipment is used for air makeup, heating, ventilation, motor cooling and trim conveying systems.

A Word About Felts . . .
"We have a tough time keeping felts clean-I guess everybody does Mel Pickering, paper mill supt., told PULP & PAPER. "We finally have found a cleaner which we are using successfully. It is made by Baugell Detergent Co. in Chicago. We mix it into a solution and shower it on the felts every eight hours. We've found this to add about 50% to the life of our wet felts. Cotton dryer felts will last us five or six months now. Asbestos felts run us almost a year. We use cotton felts at the wet end and Asten Hill felts on the dry end of the machine. Right now we're running four dryer felts to the machine. Our older machines are operating at about 1500 and the new one up close to 2000 and we seem to be getting the life we need out of our clothing now

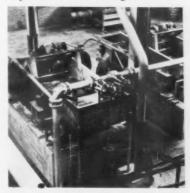
Mel is a native of Millwood, Wash., home of Inland Empire Paper Co., and he is a veteran papermaker. He worked in mills on the West Coast and in Newfoundland and had been at Southland since 1939.

How Rolls are Handled . .

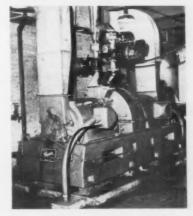
A Link-Belt Lowerator is used after No. 3 machine to deliver finished rolls to the basement for storage or shipping. From the machine, rolls are hand wrapped and delivered to a heading machine where trade stickers



Rejects to DeZurik regulators



Are dewatered on A-C screens



Routed through Bauer refiners

are sealed on both ends of the roll. The rolls are then rolled straight ahead into the Lowerator which automatically lowers to the basement floor. As the elevator stops, the roll is kicked out and rolls down an inclined cement walkway to a general storage area where lift trucks are used to right the rolls and stack them.

Other Top Men at Southland . . .

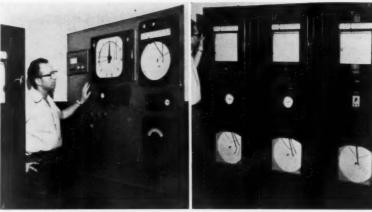
To keep Southland Paper Co. operating smoothly, top men head each department. In addition to Paper Mill Supt. Pickering and others previously mentioned, here is a rundown on the men who keep Southland going: Fred Bishop, technical director; Jack Thompson, kraft pulp supt.; Louis Pelky, groundwood supt.; Virgil Williams, power supt.; D. C. Edmiston, maintenance supt.; John McCollough, board mill supt.; Norb Bergquist, finishing supt., and A. E. Drew, chief engineer.

In its continuing quest to increase production and improve quality, Southland has already announced plans for its next expansion programphase No. 4 for the big mill which sits in the rolling hills of East Texas. Among the plans is a new paper machine which may be ready for operation by Nov. 1958. It is a safe bet to say, too, that when these plans materialize, Southland's personnel will use their ingenuity to make other changes as new and exciting as those made in phase No. 3.

Something New in pH Control

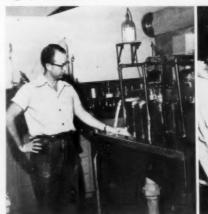
All three Fourdrinier machines at Southland have automatic pH control. Devised by Fred Bishop, the nerve center of the system is centrally located in the Control Laboratory. Fan pump samples from the machines are pumped into the lab to electrode pots with open discharges enabling technicians to make frequent calibration tests of the automatic control equipment. No. 1 and No. 3 machines have Bristol-Beckman controls, and No. 2 and the liner and filler stock systems to the cylinder machine are Leeds and Northrup.

As p Hin the range of 4.2 on cylinder machine stocks is difficult to control automatically, Southland has



Special for pH Control . . .

(Left) Beckman instruments keep accurate tally of pH on No. 1 and No. 3 machines. (Right) Leeds & Northrup controls show pH on (top) cylinder liner, cylinder filler and No. 2 machine; (bottom) ratio control of alum addition to No. 1, No. 2 and No. 3 groundwood mills.





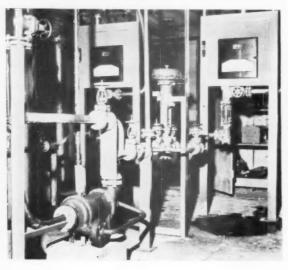
(Left) Technician takes fan pump sample from open discharge electrode pot to calibrate instruments nearby. (Right) Calibration instrument shows pH meters are right on the button.

switched to remote percentage valve controls in conjunction with the indicator recorders.

Alum is injected into shower water to the grinders in the interest of pit pH control. Nerve center of the system for each groundwood mill is the pump and meter for controlling amount of alum fed to the shower water.

The Chempump Corp. pump has no packing glands and is actually two pumps in series with impellers on each end of the rotor shaft. The rotor and impellers are turning in a full liquid medium, which solves the bad corrosion and packing gland problem formerly faced at Southland. All of the wetted parts of the pump and the 3 hp motor are of Carpenter 20 stainless

A Fischer & Porter radio control system takes over the high pressure alum flow from the Chempump pumps and automatically feeds the required amount of alum at a predetermined percentage ratio to the flow of shower water within the limits of normal operating fluctuations. Shower water from each mill is piped into the Control Laboratory for scheduled pH tests to determine that each ratio control system is working properly.



Nerve Center of pH Controls

Foreground, Chempump, with stainless impellers and rotors, does away with corrosion and packing worries. In center is diaphragm valve; at rear, Fischer & Porter Rotameter and transmitter.



Cost Control Concerns Management

Says F. O. BOYLON, Crown Z's res. mgr. at Camas, speaking at Gearhart. Seated (1 to r) HENRY W. DAUTERMAN, Longview Fibre Co., Pac. Supts. first vice chairman, NORMAN S. LEA, Scott Paper Co., new chairman of Pacific TAPPI, Toastmaster BEN T. BRIGGS, Rayonier Inc., retiring TAPPI chairman.

GEARHART MEETING SUPPLEMENT:

More Ideas for Saving Costs in Mills

Sessions featuring ways of lowering costs and upping efficiency pulled record participation at the Pacific TAPPI-Supt. joint meeting at Gearhart, Ore. Registration, highest yet, totaled 545. Ratio of mill men to suppliers was two to three.

This is a supplemental report to Gearhart cost-saving ideas featured in the July issue (written when the meeting was about half over).

Cost Control is Essential To Success of Free Enterprise . . .

So stated F. O. Boylon, resident manager of Crown Z's big Camas mill, as luncheon speaker at Gearhart. "Eliminating waste and reducing costs" was the all-encompassing theme of this three-day session.

Successful, productive programs are "sold" in the plant through first-line supervision, according to Mr. Boylon. These are implemented by staff members to whom the plans must first be sold to be successful. Job satisfaction and security are significant factors in keeping the price line and, in turn, generating better working and employment conditions.

Big Losses In Handling, Shipping

Major opportunities exist for reducing costs in materials handling, according to Elliott DeForest, of Joseph B. Ward & Associates, Seattle. He pointed out that risk of damage to paper rolls starts with the first upending and continues through to point of consumption. Damages suffered by newsprint rolls going to the California market alone totals nearly \$1 million annually. Analyses indicate half the losses are due to damage resulting from shipping and the other half in

handling. Sides of rolls suffer the greatest injury, mostly at top edges.

He urged the industry to standardize on a single type of roll-handling mechanism to minimize damage.

Frank R. Hamilton, general superintendent of Simpson Paper Co., Everett, reported that "waste campaigns" have proven effective for reducing broke losses.

To Reduce Chlorination Losses . . .

Improved chlorination and hypochlorite systems offer significant savings, according to E. Paul Duncan, Hooker Electrochemical Co., Tacoma. "Within the past two years," he stated, "some remarkable savings have been made possible through new applications of old principles in chlorination techniques and in radically new automatic hypochlorite systems."

He reported that significant savings are available through (1) more efficient mixing of chlorine and stock, (2) control of first-stage chlorination by redox measurement, and (3) automatic production of bleach liquor. In addition to saving chemicals, these factors provide potentials for quality improvements and operational advantages equaling or surpassing in importance the chemical savings.

What Supts. and Suppliers Said . . .

. . . at their round table sessions. Hugh A. Wickett, kraft supt. at Weyerhaeuser, Longview, who started up 150-ton continuous Kamyr, voiced conviction that this sort of cooking will become increasingly important. He reported almost trouble-free startup, with quality of its pulp quite similar to regular batch kraft.

T. M. James Jr., The Flox Co.: "Regular use of suitable slimicides and fungicides keeps Centri-Cleaners in condition for efficient operation."

A discussion of acid-proof lining brought a recommendation that tops of accumulators be periodically flooded to facilitate depositing solids in brick facing to protect it from high free SO₂ gas.

The papermaking group heard praise of narrow-type industrial belting (Extremultis) and duplex pickup folto-

Takes New Sales Post For U. S. Rubber Co.

Henry Davis Jr., has been appointed assistant manager of branch sales for the mechanical goods division of United States Rubber Co., headquarters, New York, it is announced by Purdy Miller, manager of branch sales.

Mr. Davis, who majored in economics at Dartmouth Univ., joined the rubber company in 1945. He has served in sales in Buffalo and Atlanta, and in Baltimore and Pittsburgh as district sales manager.



Fetes New Honorary Member . .

JACK V. SAVAGE, chairman of Pacific Coast Supts. and sulfite supt., CZ Camas mill, assembles rod and reel received from Migratory Peddlers, suppliers' organization. BOB BAER (right), of F. C. Huyck & Sons, assisted, Other members of Peddlers (1 to r): E. R. BARRETT, Pulp Bleaching Co., R. O. VOGNILD, Hooker Electrochemical Co., R. BURKE MORDEN, pres. of Morden Machines Co. and secy.-treas. of Pacific Supts., and FRANK TURNER, of Morden Machines.



New Crofton Market Pulp Mill Is Taking Shape JOHN GRIEVE, who will be mill manager, photographed by PULP & PAPER surveying site.



Seven Dominion digesters, with Esco heaters and Bingham pumps, going up. Northwest Engineering 80D crane is pouring concrete walls.

\$38,000,000 Plant Starts Up in October

Rising in picturesque Cowichan country of Vancouver Island, mill will make 425 tons per day. Program is on schedule.

. . . This was the case when the site was visited by PULP & PAPER a few weeks ago—to get these pictures.

The Crofton mill is the third to be built on the east coast of Vancouver Island since the war, the others being MacMillan & Bloedel's at Harmac, six miles south of Nanaimo, and Elk Falls Co. (Crown Zellerbach Canada) at Duncan Bay.

Crofton represents the first entry of B.C. Forest Products into the pulp field. It has previously specialized in lumber, with sawmills at Youbou, Victoria, Vancouver and Hammond, and in veneer (Youbou) and plywood (Victoria).

The photographs showing progress of construction at Crofton, taken especially for PULP & PAPER, indicate how the tidewater area is being transformed and industrialized. In the past Crofton's only claim to industry has been the existence of a dock from which many million feet of logs have been towed in rafts after shipment from the Cowichan woods on the Esquimalt & Nanaimo Railway.

Designed by Howard Simons and associates, the mill represents some features incorporated by that company at North Western Pulp & Power, Hinton, Alta., East Texas Pulp & Paper Co., Evadale, Texas, and other British Columbia mills.

Chip supply will be from five different sources—BCFP's own sawmills, from other companies' mills, logs from BCFP's own timber stands, from private operations and woodlots on Vancouver Island, and from marginal logs diverted from the lumber and plywood operations of BCFP's plants. Hemlock, fir and cedar will be utilized.

During the mill's first years of operation, most chips will be produced in the woodroom being built at Crofton, designed to produce 80 units per hour and capable of handling logs from 9 to 60 in. diameter and from 8 to 90 ft. long. Logs will be fed to a 60 in. Sumner Bellingham-type barker, and the main chipping unit is an eight-knife 113 in. Hansel chipper.

A 4-Man Woodroom . .

The woodroom is designed for fourman operation and will be one of the West Coast industry's closest approaches to automation. The log haul operator handles the log haul, outside transfer deck, the swing and chain cutoff saws, kickers and transfer deck into the barker. The barker operator handles the infeed deck, loaders, unloaders and the outfeed transfer deck as well as the barker. A third operator leads the logs to the chipper or to the carriage infeed deck, and in addition loads the cants from the offside deck to the chipper or to the outside transfer deck. The fourth man is the sawyer who handles the carriage.

Chips arriving at the mill by scow will be unloaded by Colby crane to a dock conveyer at the rate of 60 units per hour. The chip handling system to the silos has been designed so that in the future it will be able to handle two species of chips simultaneously from two different sources by merely installing an additional conveyor. There will be five storage silos for chips and a 42 in. belt conveyor will spill chips into a series of seven digesters, each 13 ft. 3 in. diameter by 53 ft. 11 in. high of carbon steel grade B firebox quality with 3-4 in. corrosion allowance, 6100 cu. ft. capacity, considered ample for long, low temperature cooks to yield high quality pulp.

Most processing is of conventional



More of Mill Structures at Crofton

Note size of man alongside chip silos, rising simultaneously. Slip jacks, raised by hydraulic jacks, advance 5 ft. per 24 hrs., three shifts. Concrete pouring is continuous.



Two Foster-Wheeler oil and hog-fired boilers being housed in all-steel L-shaped framework 131 ft. high.

character, and the general flow through the mill was for the first time described in an article appearing in PULP & PAPER's Oct. 1956 issue. The bleach plant, consisting of six towers and washers, is piped so that various sequences may be used to meet varying market requirements. All bleach washers are 11 ft. 6 in. diameter by 20 ft. long stainless steel drums in tile vats with Fiberglas fume hoods. All mixers, piping, valves, pumps and miscellaneous equipment are of stainless types 304, 316 or 317, depending on the service.

Hypochlorite bleach will be made from chlorine and milk of lime in continuous automatic equipment. Chlorine dioxide will be generated in two Mathieson alkali design units with secondary generators and scrubbers. The gas is absorbed in two stoneware packed columns and the water solution is stored in two brick lined steel tanks, sufficient capacity being installed to provide a continuous supply of solution and eliminate the possibility of variation in brightness. All equipment in the generating plant is chemical stoneware, acid resistant brick, polyvinyl resin, saranlined steel or lead, depending on service. Three 40-ton high-densitytile storage towers will take the bleached stock from the final washer. Stebbins brick tile is used throughout.

Stock will be pumped from the bleaching chest through a consistency regulator to a headbox and through a controlled stock valve to the stainless steel machine headbox. The Dominion Engineering machine has a conventional 178 in. wide Fourdrinier wet end with a Rotabelt and suc-

tion couch. The press section consists of two suction presses and one plain third press, with a pre-dryer between the second and third presses. The Dominion dryer is a Minton design vacuum unit designed to dry in excess of 500 tons per day to 100% air dry. The dryer consists of 68-60 in. diameter by 174 in. dryers, with two top and two bottom felts. The whole machine is driven by a Harland electric sectional drive. The dried sheet will be slit and cut in a Lamb Grays Harbor cutter and layboy and made up into 500 lb. bales 30 x 35 x 17 in.

Production has been confined to single unit process equipment as far as possible to give lowest labor cost and maximum supervision of each unit process. Instrumentation has been carried to a high degree to insure quality of product, and structures are of concrete with minimum exposure of steel to reduce maintenance and danger of rust or contamination by extraneous dirt.

All pulp produced at Crofton will be marketed through Mead Pulp Sales, Inc.

W. W. Holland is BCFP vice president, pulp, and directing overall operations with John B. Grieve, mill manager, and Donald H. Baker, assistant manager. E. G. Wilson is general supt.; G. S. G. Jones, resident engineer; D. N. Pederson, office manager; J. L. Gallagher, personnel supervisor, and W. S. Holgate, maintenance supt.

Chairman of the board of BCFP is E. P. Taylor of Toronto. H. G. Munro, Vancouver, B. C., is president, with T. E. Burgess, vice president, production

Camas Bleach Plant Starts; Other Expansion

A 300-ton daily capacity \$2,700,000 kraft bleach plant was cut into production the second week of July at Crown Zellerbach's Camas, Wash., mill, to provide for more food packaging, tabulating cards, file folders and envelopes. It doubles kraft bleaching capacity at Camas.

This is part of a nearly completed expansion increasing Camas capacity 20% and bring kraft pulp capacity alone to 700 tons a day.

A new Babcock & Wilcox \$2,000,-000 kraft recovery boiler, 350 tons capacity, and Buell electrostatic precipitators started up in March. Also a 120-tons-per-day Allis-Chalmers lime kiln. The kraft recovery capacity at Camas is doubled.

Work is nearly complete on replacing the last of eight old rotary digesters with 10-ton capacity kraft stationary digesters. Also, a new continuous digester will start up later this year.

New Tidland Plant

Tidland Machine Co., manufacturer of pneumatic winder shafts and specialized paper mill machinery at Camas and Washougal, Wash., is erecting a \$100,000 building at Camas, where all production will be consolidated.

Elected B&W President

M. Nielsen is newly elected president of Babcock & Wilcox Co. For the past two years executive vice president of the company, Mr. Nielsen succeeds Alfred Iddles, who is retiring.

Paper Use of Starch Multiplies 5 Times in 10 Years



So, This New Research Center Will be Busy many of its problems will come from corn starch's biggest and fastest growing markets . . . the paper and corrugated containers industries. Nearly all grades of paper now use starch . . .



And These Technicians Will be Busy, Too . . . (L. to r.) DR. JOHN M. NEWTON, director of technical sales service; CLARENCE D. KELLY, veteran paper technologist; B. H. LANDIS, industrial applications; GEORGE B. REDMOND, industrial field service; J. R. PIEHLER, technologist.

They Have More Problems because:

Paper mills used 590,417,000 lbs. of corn starch last year to bind fibers and to smooth surfaces . . .

✓ Starch replaces silicate in corrugated containers, which consume another 200,000,000 lbs. of starch . . .

Nearly all future containerboard will be water resistant or waterproof, requiring a superior starch...

Papermaking trends are toward use of higher solids, faster speeds, increased heat—demanding more specialized starches

treest to the paper and paperboard industries brought out at a press preview of the million dollar Research Center, shown above, which the 50-year-old Clinton Corn Processing Co. formally opened at Clinton, Ia., in late June. Virtually all types of paper mills except newsprint and tissue use starch today.

Over 400 plants are now making corrugated containers. In 90% of these starch has replaced silicate. It takes only 3 lbs. of starch to do what required 18 lbs. of silicate, said Clinton's researchers. They add that silicate won't set up as fast, or bond as fast. The big demand today in the containers field is for waterproof glue lines. Clinton technicians think that virtually all future paperboard is going to be waterproof or water resistant. Higher speeds impose demand for improved starches, as corrugators already have been built almost a quarter mile long, and so the trend is for higher solids and faster drying.

Starches and dextrines are used for wet-end addition, for tub sizing, for calender sizing and for the rapidly growing coating field. In coating and other uses, higher speeds on machines and the trend to higher solids impose stricter requirements for specialty starches. Multiwall bags is another big outlet for starches.

Both the paper industry and corrugated containers, considered as separate fields, are No. 1 and No. 2 users today of starch—both having passed textiles. The new Clinton Research Center will emphasize starches more and more, as it is a faster growing outlet for corn products than syrups, sugars, feeds, etc. It will give work to 60 scientists. Besides, Clinton has 25 men in technical sales service.

Clinton uses 65,000 bushels of corn

a day—33 rail carloads. The original Clinton Sugar Refining Co., back in 1907, ground only 3,000 bushels a day. Employment has increased from 250 to 1,500 persons. In 1956, Clinton became a division of Standard Brands Inc.

With business editors, science writers, even political writers among guests at the press preview—from the N.Y. Times, Chicago Tribune and many other papers, and about 20 magazines, including PULP & PAPER, it is not surprising that questions ranged over a wide field—from "crystal ball" gazing to government farm policies and practices.

Clinton's R. C. Wagner, president; George T. Peckham, Jr., research director; H. A. Bendixen, vice president and general sales manager; A. C. Jung, sales manager, primary products; Dr. John M. Newton, technical sales service director; R. P. Jurgensen, production manager; George E. Corson, in charge of food and drug act matters, trademarks, advertising, etc., and Clarence D. Kelly, paper technologist—one and all, they stood up bravely to the onslaught.

Without pinning quotes down to anyone in particular, since it was quite informal, here's what came out of the "crystal ball"—

PAPER MADE OF CORN?

- Fine Laboratory Paper Is Made
- (Not Old Corn Stalks Paper, Either)
- It's a Question of Molecules . . .
- And Also of Price and Fast Growth

These are all factors that could some day tip the balance in favor of corn paper. The Clinton people were not talking about the corn stalks low quality board, which created such a stir in this industry over 20 years ago or longer, and which is still made in an Iowa mill.

A fine sample of laboratory paper has been made from corn starch. Iowa and Purdue universities have done work in different research fields with corn that could some day make corn pulp and paper practical.

In wood cellulose, the molecules are linked in a straight line. In corn, there are "branch type" molecules. But at Purdue, a special corn has been grown with 80% straight line molecules exactly like those in wood cellu-

lose. This could be important.

Demand, price and supply are decisive factors. Price of woodpulp today is close to that of what corn pulp might be. A Mississippi farmer has grown 300 bushels of corn to an acre. In time, his record will be matched in other areas, it is predicted. That means that more corn carbohydrates could be grown than wood carbohydrates per acre in Northern states. Southern states would still do better with wood.

But there are so many other poten-

tial uses for corn—maybe the pressure would be taken off paper. For instance, rubber and plastics can be made from corn. Corn starch can be the source of many materials that are now made from petroleum. If coal and oil resources become depleted, corn stands ready to fill the gap. So, it looks like wood will be the raw material for paper and paperboard for a long time. At least, wood is a renewable resource. And wood geneticists and technologists are busy, too, improving their raw material.

Pulpmen Hold Annual Golf Competition







Officers and Winners . . .

(Left) NEW OFFICERS of New York Pulpmen's Golf Assn. (1 to r): ERIK GORANSON, Cellulose Sales Corp., president; HOWARD C. PETERSON, JR., St. Regis Paper Co., new secretary-treasurer, and TOM SALB, Dunton, vice president. (Middle) FOR LOW NET, THE ANDERS TROPHY (1 to r): ERIK GORANSON, Cellulose Sales, looks on as FRANK DONLON, Perkins-Goodwin, receives trophy for low net from BILL ANDERS, donor. (Right) FOR LOW GROSS: The winner, holding his cup, is CARL DISKIN, Gottesman & Co., Inc.

Goranson Elected Head of N. Y. Pulpmen's Group

The New York Pulpmen's Golf Assn., with guests from many parts of the country on hand, held their annual outing recently.

At the annual event this year, low net was scored by Frank Donlon of Perkins-Goodwin Co. Low gross was recorded by Carl Diskin of Gottesman & Co., Inc.

New officers elected are Erik Goranson, Cellulose Sales Corp., president; Tom Salb, Bulkley, Dunton Pulp Co., vice president, and Howard C. Peterson Jr., St. Regis Paper Co., secretary-treasurer.



Symphony of Friends . . .

(L to r) MORRY HORTON, Mead, CARLTON OVERTON, Castle & Overton, ED VAUGHAN, Bulkley, Dunton, PHIL HOVEY, Oxford, and KARL CLAUSON, Stora Kopparberg.







Scenes and Views

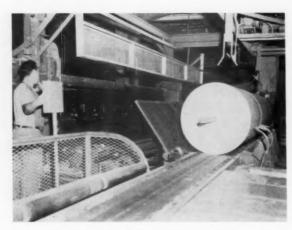
CLeft) PHIL HOVEY, Oxford Paper Co., and DAVE BRITTAIN, Mead Pulp Sales. (Middle, 1 to r) TIM OVERTON, Castle & Overton, REED PORTER, Pulp Consumers Assn., WALTER LAWRENCE, Gulf States, and STAN McDERMOTT, Bulkley, Dunton. (Right) STAN BLANKENSHIP, Perkins-Goodwin, and BERT BLATTMAN, Pagel, Horton.

Improvements in Roll Handling

New equipment at Powell River features automatic shaft handling and almost automatic core feeding

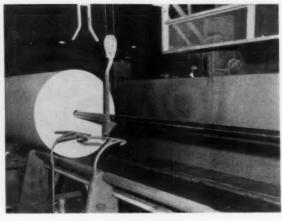
· One of the newest improved roll handling installations in the industry is in successful operation at the Powell River Co., Ltd., Vancouver, B. C. The system was engineered and all equipment supplied by Lamb-Grays Harbor Co., Inc., of Hoquiam, Washington. Acting as coordinator on the \$200,000 project was Colin Campbell of the Powell River engineering staff.

The equipment, which features automatic shaft handling and almost automatic core feeding, follows three winders in the No. 7 and 8 machine room. One of these winders is a new high speed Jagenberg winder developed in Germany.



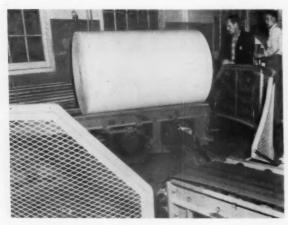
1. Rolls pass over lowered drawbridge . . .

. . . after rolls are slit, operator presses button which lowers deck between winder and stripping conveyor. Air-driven kicker ejects rolls across deck and bridge automatically rises when rolls stop on conveyor. Conveyor moves rolls end-wise off shaft and . . .



2. Anchor engages core shaft.

. . . pair of anchor hooks on overhead crane swoops down and takes weight of shaft. After rolls are moved clear, conveyor stops, kicker pushes rolls onto sorting deck. Crane carries empty core shaft up, over and down until . . .



5. Turns rolls around corner . . .

. . . Asst. Finishing Room Supt. Evan Pirie intently watches action of swing conveyor, activated by operator at pushbutton control. At end of conveyor system, rolls are kicked down storage ramp where by pushbutton control, roll is tipped onto wrapping drums . .



6. Button selects proper wrapper width.

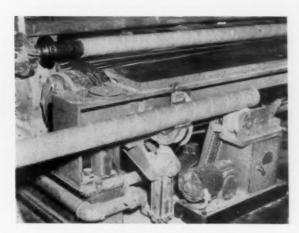
. . . treadles press rubber wheel against revolving drums, driving rollers which dispense bands. When roll is wrapped, flying wire cuts sheet. Men insert soft heads, push pedal to cut off bands and crimp wrapper and bands over roll end . . .

The old method required the crew to handle a set of rolls by air hoist from the winder to wrapping drums, manually extract a 400-lb. shaft 22 ft. long, juggle the shaft back to the winder on a small dolly, and reload it with cores before putting it back on the machine—and to repeat the operation every 20 minutes or so. Result: a high incidence of sprained backs.

The new method is illustrated in these pictures which show eight steps in the operation, from winder to final loading. Coinciding with the improvement in roll handling, no sprained backs have been reported recently at Powell River.

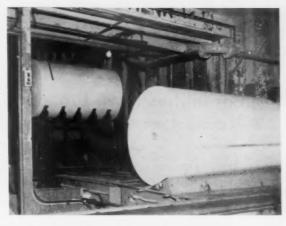






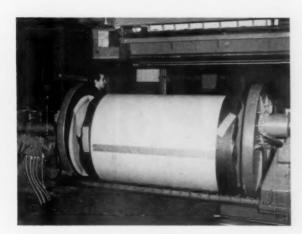
3. Core shaft is stored in pocket . . .

... on winder apron. Started by hand, cores are driven into place by foot controlled mechanism. When needed, arms rise up, rolling shaft into bearing on winder. After stripping and marking, rolls pass to Lowerator . . .



4. Carries rolls to finishing room . . .

. . . Lowerator deposits rolls on storage ramp. Deckstop passes them on one at a time onto first of five conveyors which carry rolls to finishing line . . .



7. Heads glued at each end . . .

. . . operator puts gluer through automatic cycle twice, spraying glue on two heads. Pressure holds for timed period, then platens release roll, ejecting it onto storage ramp. In next step, rolls move to scale-ready conveyor, are stamped, nudged down ramp . . .



8. Upender makes loading easy . . .

. . . as truck operator backs away with rolls, he yanks dropcord selector which returns upender to down position until 1 or 2 rolls are passed on from deckstop. Then upender starts up, hesitates while rolls settle, then moves upright. Selected load awaits lift truck.



Keve Larson (facing camera) talks about matters in the world of pulp with Bob Nash. For their Pulp Division sales

Responsibilities Have Broadened . . .

Since startup of new 400-ton sulfite mill at Cosmopolis, Wash.

. . . and this Pulp Division sales force has a bigger job because of many other Weyerhaeuser Timber Co. developments in recent years, involving output of both pulp and paper-board mills in the west.

Many key men in WT Co., serving under Vice President Howard W. Morgan, Pulp Division manager, and men who have passed on or retired, have contributed to the worldwide growth of that division. Stories of new mills, however, often neglect the sales force. Contributing no small part to the evolution of the Weyerhaeuser Pulp Division from one mill producing 60,000 tons of pulp to eight mills producing 875,000 tons of pulp, con-

tainerboard and bleached kraft are these men in the field.

Keve Larson, widely known throughout the industry, was born in Neenah, Wis., graduated from Lawrence College and went on to Oxford as a Rhodes scholar. He gained experience selling pulp for Mead in Chicago and paper and paperboard for Fraser Cos. in London and New York, then joined Weyerhaeuser in 1935. He has played a leading part in the evolution of the Pulp Division. From 1942 to 1946 he served as special consultant to the War Production Board's Pulp and Paper Branch, then advised the Office of Defense Mobilization during the Korean emergency, and now continues as official consultant to ODM and the Department of Commerce. His office is at 230 Park Ave., New York.

Working with Keve in New York is Robert L. Nash. Born in Wisconsin Rapids, Wis., he attended University of Texas, then served in the Army air corps during World War II. He started with Weyerhaeuser in production—as a member of the bull gang in the mill at Everett, Wash.—switching to sales in 1946.

H. F. (Dave) Bigelow, headquartered in Clinton, Mass., covers the northeast. After attending Harvard, Dave served with the 26th Division engineers in France during World War I. Well known to the pulp and paper industry throughout New England and neighboring states he has represented Weyerhaeuser in this area since 1931.

The new member of the sales team, Roger Wiewel, joined Dave in July after taking the special summer course for industry men at the Institute of Paper Chemistry. He is a graduate of Carnegie Tech and Harvard Business School, joining WT Co. in 1952 immediately after leaving Harvard. He was born in Bronxville, N. Y., and grew up in Pittsburgh, where his father, W. H. Wiewel, is senior vice president of Crucible Steel Co.

In charge of the Chicago office, at 400 West Madison St., is Spencer M. (Spen) Smith, succeeding the late William A. Geiger, who had headed that office for many years until he passed away last fall. A native of Zanesville, O., Spen graduated from Dartmouth in 1946 and went to work as helper in the recovery plant in Weyerhaeuser's mill at Longview, Wash. He joined the sales force in 1949.

Helping Spen is John Shethar, a native New Yorker who graduated from Yale in 1950. He served in the



On Weyerhaeuser Sales Team . . . From left are JOHN SHETHAR, ROBERT L. NASH, DONALD SEIXAS, H. F. (DAVE) BIGELOW, and SPENCER M. (SPEN) SMITH.



ROGER WIEWEL (left), newest member of Weyerhaeuser Pulp Div. sales staff. DON LIND (right), sales representative at Cosmopolis, keeping a step ahead of routing and shipping pulp to eastern paper mills. At each Weyerhaeuser mill, the sales staff has assistance of a representative such as Mr. Lind; GLENN McAFFEE, at Longview; BILL KILLIEN, Everett and LANE BOYLE at Springfield.

Marine Corps, worked briefly in Union Bag and Paper Corp.'s mill at Savannah, Go., then in that company's sales department, joining Weyerhaeuser in 1953.

In San Francisco is Donald (Don) Seixas, at 681 Market St. Born in Ridgewood, N.J., Don graduated from Dartmouth, then learned about pulp and paper in the purchasing department of American Can Co., spe-

cializing in paperboard. He changed from American Can to Weyerhaeuser, and from buying to selling, in 1953, when Weyerhaeuser built its first paperboard mill. Now he is equally at home with either board or pulp.

The late Bill Geiger was likewise a Dartmouth graduate, son of a distinguished faculty member and former superintendent of schools in Tacoma, has stimulated community interest and given many teachers an extra spark. In the North, real progress is reportedly being made. Education guidance workshops have been set up.



Head Man in New Paper Div. As result of acquisition of National Container Corp. by Owens-Illinois Class Co., HUGH C. LAUGHLIN, executive v.p. and director of Owens-Illinois in Toledo, O., becomes one of top executives in this industry. He is also president of the Mill and Multiwall Bag Divisions of O-I (which embrace all six National Container paper mills and its many converting plants) and chairman of the board of National Container Corp., subsidiary of O-I. Several NCC execs have moved to Toledo to take key positions in the new O-I Mill Division, including C. G. McLAREN, vice pres. and gen. mgr., mills and woodlands, F. B. SCHELHORN, vice pres., mfg., Mill Division, and others.

A School Problem-Common to Mill Towns

How IP Went about Solving It

• Three years ago officials of International Paper Co. Foundation began to study a scholarship program for mill communities in the South and the North. When they discussed their idea with college officials, they received a jolt.

"You'd be of greater help," advised college authorities, "if you study how to improve the effectiveness of teaching in secondary schools. We spend half the freshman year teaching students what they should have learned in secondary schools."

Said William A. Hanway, secretary of IP and president of the Foundation: "So we approached education leaders at the School of Education, Alabama Polytechnic Institute and the Institute of Field Studies, Teachers College, Columbia University. We asked what can be done to speed up effectiveness of secondary schools."

This is a problem peculiar to almost every pulp and paper mill community, usually distant from populated urban

The next step was to invite officials of 15 school systems serving IP mill communities in the South to sit down with the mill managers for three days. At first there were just stony glances.

"We told them we had absolutely no purpose other than to help them," said Mr. Hanway. "We offered top grade professional assistance if they did have problems."

How it Works . . .

Through surveys (undertaken at the invitation of local school boards) and through teacher seminars at Alabama Polytechnic Institute and Columbia University, classroom teachers are given aids in improvement of their teaching techniques.

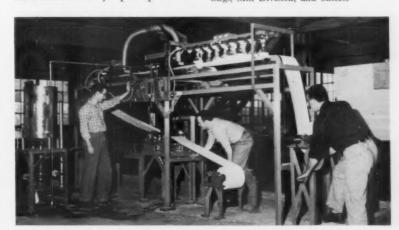
For instance, during three week seminars at Alabama Polytech in the summer (IP Foundation pays transportation and subsistence), teachers learn more about science, get new ideas on how to teach. Back in home towns, teachers share what they have

As to what studies schools shall undertake, this is up to them. IP Foundation places no strings on this just supplies the "seed" money to get started. At the end of a certain period, the project is evaluated. If it shows promise and the taxpayer wants to continue, fine; if not, it is dropped.

PULP & PAPER asked educators spearheading this program for the Foundation, at API and Columbia, what they thought of it. Some reactions:

"No school is so good that it can't be better. The IP Foundation is not trying to monkey with education, just supporting better schools."

Laboratory work in Southern schools whose teachers have attended the seminars have jumped up 50%. It



A New Coater—Said to be Unique

New coating techniques and formulas are being evaluated on this "only-one-of-its-kind" coater by the coating research group of the St. Regis Paper Co.

Built by this group, which is based at the Deferiet, N. Y., operations, the unit is housed at the Carthage, New York, St. Regis Mill.

Some interesting features:

Use of infra-red drying consisting of ceramic elements for far-infra red energy combined with the light emitting near infra-red bulbs.

This pilot coating machine on which St. Regis is evaluating present and future coating formulas and techniques is reported by Jack Wilber, director of technical services, to be sufficiently versatile as to permit evaluation of most coating methods.

Testing an experimental coating color on bleached stock are (left to right): Paul Plante, group leader in coating research division: Eben "Cooky" Cook, and Artchie Laverty, coating technicians.



Canadians on Tour of British Mills This picture shows Canadians (whose tour was previously reported in PULP & PAFER) in front of Storrs Hall, the home of Mr. & Mrs. Horace Spencer. He is a director of Porrits and Spencer Ltd. and his wife is a Canadian. From left to right the men in

in front of Storrs Hall, the home of Mr. & Mrs. Horace Spencer. He is a director of Porrits and Spencer Ltd. and his wife is a Canadian. From left to right the men in the picture are:

E. L. Neal, general manager, Gaspesia Sulphite Co. Ltd.; T. B. B. Ford, president, J. Ford & Co. Ltd.; Douglas Jones, executive secretary, Technical Section, Canadian Pulp & Paper Assn.; C. H. Bancroft, president, G. H. Bancroft Ltd.; Gordon Rochester, counsellor to high commissioner for Canada, London; Marc Rolland, vice president & manager of mills, Rolland Paper Co. Ltd.; Gerald Penney, vice president, Sandwell International; E. G. Kirby, manager, Price & Pierce Ltd.; C. E. Turner, vice president, Building Products Ltd.; Dr. R. de Montigny, chairman of Technical Services Dept., Pulp & Paper Research Institute of Canada; J. B. Jones, vice president-mfg, The Ontario Paper Co. Ltd.; Daniel McNeil, chairman of Technical Section, British Paper & Board Makers' Assn., also managing director, Grove Mill Paper Co. Ltd., New Mills, Derbyshire; Dr. John Keays, supt. of research, Powell River Co. Ltd.; T. C. Catlin, vice president, Gilbert Paper Co. (U.S.A.); Larry Harris, mill manager, MacMillan & Bloedel Ltd., Harmac, B.C.; D. C. Currie, asst. mill manager, Howard Smith Paper Mills Ltd., Beauharnois, P.Q.; Philip Dixon, chairman, Northern Division, Technical Section, British Paper & Board Makers' Association, also Mill Manager, Peter Dixon & Son Ltd., Sheffield, Eng.; R. M. Cooper, vice president, Powell River Co. Ltd.; J. W. Wing, general mgr., Dryden Paper Co. Ltd.; L. R. Beath, asst. director, research, Price Bros. & Co. Ltd.
Wives (left to right) are: Mrs. Kirby; Mrs. Neal; Mrs. Wing; Mrs. Rochester; Mrs. D. Jones; Mrs. Beath; Mrs. Bancroft; Mrs. Rolland; Mrs. K. C. Logan, (Dr. Logan not in picture, is research director, Anglo Paper Products Ltd.); Mrs. Ford; Mrs. Keays; Mrs. de Montigny; Mrs. J. B. Jones; Mrs. Cooper; Mrs. C. E. Turner (wife of a Horace Spencer sales engineer), and Mrs. Penney. Group around doorway are English.



Flying Down to Trona, Calif.

Flying Down to Trong, Calif.
Pulp and paper industry representatives from Pacific Northwest made flying trip recently to see American Potash & Chemical Corp. facilities at Trona, Calif., and Henderson, Nev. Front row, (I to r): JACK LAMB, St. Regis Paper Co., WILLIAM M. CLINES, western general sales mgr., and RALPH HOH, western sales mgr., of AP&CC, HARRY BRAYNE, Weyerhaeuser Timber Co., and DEAN BOSTWICK, Simpson Paper Co. at rear (I to r): LARRY HARRIS, MacMillan & Bloedel, Ltd., RICHARD REEP and DANIEL LUNDY of AP&CC, BYRON WHITE, Fibreboard Paper Products Co., LEONARD FRANK, Crown-Zellerbach Corp., DAVID McCUTCHEON, Canadian Forest Products, Ltd., R. M. INKSTER, Weyerhaeuser Timber Co., EARL WRIGHT, MacMillan & Bloedel, Ltd., EARLE BERGER, St. Regis Paper Co., and ROD TAFT and PAUL STAUB of AP&CC. Mr. Clines, Mr. Hoh, and others from American Potash & Chemical Corp. were on hand to welcome the group.

PULP &

PICTURES OF PEOPLE IN THE NEWS





In Southern and Midwest News

OHN E. RAY, III (left), vice pres., Camp div., of Union Bag-Camp Paper Corp., is named resident manager of the firm's Franklin, Va. plant. Mr. Ray joined the company in 1945 and will continue to supervise pulp and paper operations as well as industrial relations, plant engi-

neering and technical depts.

MARTIN KIRCHHOEFER (right) is ap-MARTIN KIRCHHOEFER (right) is appointed to the new position of industrial engineer, announces Stanton W. Mead, pres., Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis. Mr. Kirchhoefer is a graduate of Valparaiso U., Valparaiso, Ind. and joined the firm in 1935. For the past 12 years he has been purphysically death exprises. purchasing dept. engineer.





In New Midwest Posts

In New Midwest Posts

JOSEPH J. PARKER (left) has been appointed representative in Middle West territory for Eastwood-Nealley Corp., wire manufacturers. His present address is Route 2, Menasha, Wis. His future address is undecided. He spent three years at the Eastwood factory and last year concentrated on sales, traveling in the Midwest and elsewhere. He succeeds Frank Eilers, who continues as consultant and will make calls on requests received at Eastwood-Nealley headquarters. Mr. Eilers continues to represent Orr Felts.

Felts.
GEORGE W. ABEL (right) is new director of technical forestry for the Mill Division of Owens-Illinois Glass Co., announces C. G. McLaren, vice president and general manager of mills and timberlands. His headquarters will be in the company's general offices in Toledo. A forester and forest economist since 1937, a graduate of Minnesota, with master's in forest ecology from Cornell. Mr. Abel in forest ecology from Cornell, Mr. Abel came to O-I from St. Regis Paper Co., where he had been director of forest engineering in Jacksonville, Fla. since 1951.





New in South

New in South
WILLIAM LEHR (left), is mgr. of new
Babcock & Wilcox, tubular products div.
office in Atlanta serving six southeastern
states. Office location: 830 W. Peachtree,
R. W. WALKER (right), asst. office mgr.
at Crown Zellerbach Corp.'s West Linn,
Ore., paper mill, is moving to St. Francisville Paper Co., St. Francisville, La., as
office mgr., reports EDWARD H. NUNN,
resident mgr. at St. Francisville. A graduate of U. of Washington, Mr. Walker
joined Crown Z in 1941. joined Crown Z in 1941.





News of Midwest Suppliers

WALLACE COLLETT (left), is now product sales mgr., material handling dept., tractor group, Allis-Chalmers Mfg. Co., Milwaukee, Wis. Mr. Collett joined Allis-Chalmers in 1950 and came to the Allis-Chalmers in 1950 and came to the home office in Milwaukee in 1956 in the tractor group's sales training section.
CHARLES K. PFRANGLE (right), is now representing Stowe-Woodward, Inc. in Minn. and northern Wis., with head-quarters at Neenah, Wis., plant. Mr. Pfrangle is a graduate engineer from Purdue and was with Beloit Iron Works.





In New Positions

In New Positions

MICHAEL W. HUBER (left) is newly elected president, J. M. Huber Corp., New York. Hans W. Huber is new chairman. Michael Huber joined the firm in 1949 and is a grad of Princeton U. JAMES E. POST (right) is new sales mgr., roll coverings, Manhattan Rubber Div., Raybestos-Manhattan, Inc., Passaic, N.J., it is announced by Vice Pres. H. H. Burrows. Mr. Post will headquarter in Passaic, handling sales at Neenah, Wis. and Passaic plants.

and Passaic plants.



New Southeastern TAPPI Leaders

Looking like they'll enjoy the work facing them during the coming year, new TAPPI committeemen in Southeast smile for PULP & PAPER's camera: (I to r) chairman, W. C. CHAPMAN, of Union Bag-Camp; vice chairman, ROY MILLER of St. Regis; secretary, J. B. (Bing) DOUGHTY, West Va. Pulp & Paper Co., and treasurer, DAVE WEATHERHORN, of Southern Paperboard.









New Top Men at Dryden

(L to r) J. W. WING is new gen. mgr. and director of Dryden Paper Co., Ltd., Dryden, Ont. A graduate of Queen's Univ., he was formerly vice pres. and gen. mgr. of Gaspesia Sulphite Co., Ltd., Chandler, Que. DAVID YOUNG and R. J. CHAMBERS, also new directors. Mr. Young joined Dryden in 1945 and is secy-treas.; Mr. Chambers is asst, chief engineer of general engineering div. of Anglo-Canadian Pulp & Paper Mills, Ltd., Quebec City, Que. E. G. MACDONALD new development engineer and ALEC GLEN, chief engineer of the Dryden Paper Co. "Duke" Macdonald has been with the company since 1937, and chief engineer since 1944. English-born Alec Glen served as engineering officer on minesweepers and frigates in the North Atlantic, He joined Gaspesia Sulphite in 1946 and in 1955 was assigned to Dryden as project engineer. as project engineer.







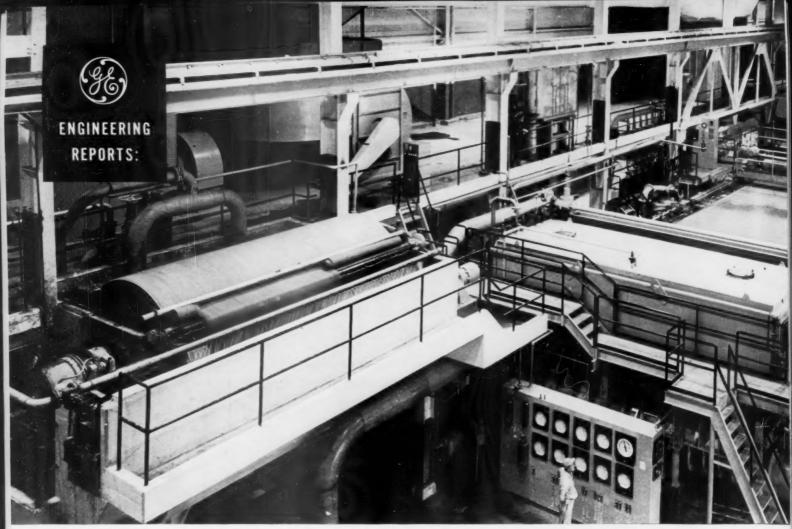




New Appointments in Industry

New Appointments in Industry
(L to r): ROBERT E. WILKIN, v.p. and dir. of sales, of parent Hooker Electrochemical Co., Niagara Falls, N.Y., Hooker Chemicals Ltd., North Vancouver, B.C., replacing J. H. Babcock who retired. A native of Newark, O., Mr. Wilkin has a b.s. degree from Denison U. and m.s. from the U. of Iowa.
WILLIAM W. TOLLEY is new mgr. of purchases for Nekoosa-Edwards Paper Co., Port Edwards, Wis. Mr. Tolley has been asst. mgr. of purchases since 1951. J. K. Vanatta, mgr. for several years, is eligible for retirement but continues actively in purchasing dept.
ROBERT E. STEELE joins Holyoke Machine Co. as sales engineer for pressure and gravity filters. He's a U. of Maine grad, has been with Hamilton Standard div., United Aircraft, and Minneapolis-Honeywell.
DAVID M. SHAPLEIGH bolsters sales activities of The Bauer Bros. Co.'s recently opened Springfield, Mass., office. His previous experience includes Brown Co., Hercules Powder Co. and Chemipulp Process, Inc. He's a U. of Maine grad, major in pulp and paper.

pulp and paper.
R. K. BLACKBURN is new Northeastern sales service rep. for Beloit Iron Works, Beloit, Wis. Mr. Blackburn has been erecting engineer and in customer service and sales work for Beloit. He will live in Portland, Me.



LARGEST IN THE WEST, this 260-inch Fourdrinier in Crown-Zellerbach's new paper mill at Antioch, Calif. is 440 feet from head box to calender rolls. It is

lineshaft-driven at a rated speed of 2500 fpm by a General Electric geared turbine, with G-E electric helper drives on the wet end and size press.

Providing 400 tons per day kraft and board capacity . . .

General Electric designed electrical system powers new Crown-Zellerbach Antioch mill

General Electric engineers co-ordinate mill's power and drive equipment, supervise installations, to meet needs of West's largest paper machine

Containing the largest paper machine in the West, Crown-Zellerbach's new \$18½ million mill at Antioch, California—with a capacity of 400 tons per day of kraft and board—is part of an over-all expansion program of major proportions. The new mill will add 140,000 tons of paper annually to the company's capacity.

General Electric equipment and engineering services played a major part in achieving this addition. General Electric equipment was selected throughout to supply, distribute and control the power to keep production rolling. Co-ordination of the equipment into a flexible, easy-to-expand electrical system—designed to meet the mill's special needs—resulted from close co-operation between Crown-Zellerbach and General Electric application engineers. And

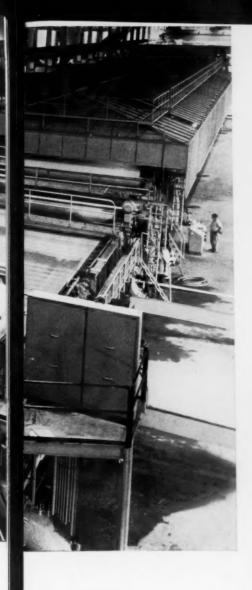
careful supervision of the equipment's installation by General Electric field-service engineers helped meet mill construction schedules, expedited early start-up and profitable production. Only 4 months after completion, the mill is already producing near 100% of capacity.

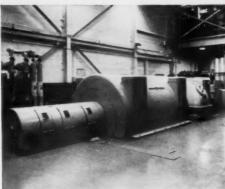
To meet your specific production needs, too, General Electric engineering services can help design, equip and install a co-ordinated electrical system—from one-line diagram to on-time start-up. Early in your planning, call your nearest General Electric Apparatus Sales Office. Meanwhile, write for bulletins GEA-6508 on paper-mill drive systems and GEA-5521 on paper-mill power systems to General Electric Company, Section 655-18, Schenectady 5, New York.

Engineered Electrical Systems for the Paper Industry

GENERAL ELECTRIC



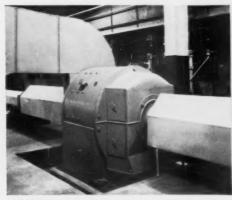




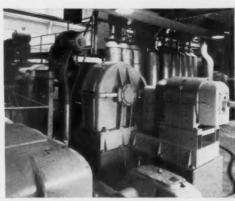
HIGH-EFFICIENCY G-E 12,500-kw turbine-generator produces mill's power, and extracts up to 200, 000 pounds of steam per hour for process use.



SYSTEM FLEXIBILITY is provided by 15 G-E loadcenter unit substations, which can easily be supplemented to match the mill's load-change needs.



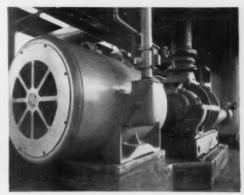
DC POWER SOURCE for helper drive is provided by enclosed, separately-ventilated, lineshaft-driven 400-kw generator.



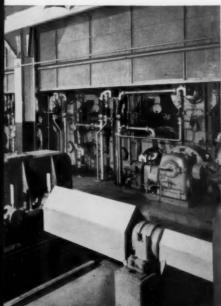
LONGER WIRE LIFE is obtained in mill by amplistatregulated General Electric helper drives, with three 150-hp d-c Fourdrinier helper motors.

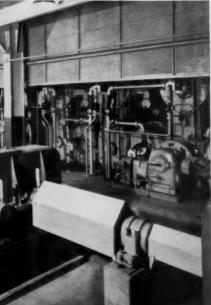


BETTER PROTECTION against physical damage is provided by the cast-iron frame construction of these three 200-hp Tri-Clad* '55' pump motors.



SAFEGUARDED against corrosion, water and fumes this 200-hp totally enclosed, fan-cooled General Electric motor (1 of 2) drives a vacuum pump.





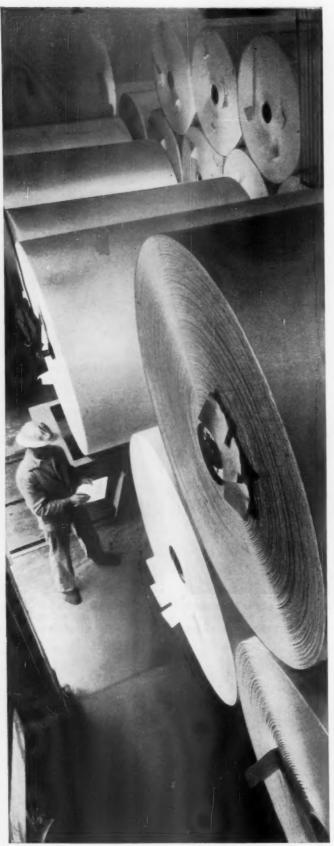
PRIME MOVER for the huge paper machine is this 2400-hp G-E geared turbine with a 6 to 1 speed range. New turbine governor holds speed constant to 1/10 of 1% of rated speed at all points over the speed range, to help provide higher

quality production.



EFFECTIVE CONTROL and short-circuit protection for mill's 2300-v G-E motors is supplied by new

Limitamp* controllers that take only half the space of previous models. *Reg. trade-mark of General Electric Co.



JBH

Rayonier's new sulfate hardwood completes line, promises you new opacity, brightness and strength

JBH—a new top-quality hardwood sulfate pulp produced at Rayonier's Jesup, Ga. Division.

JBH—specifically designed to bring you new qualities of opacity, brightness, strength, formation and bulk ... plus new possibilities for better book and print papers.

JBH—backed by the self-same research, manufacturing and technical proficiency which have made Rayonier celluloses the world's standards.

JBH—added evidence of Rayonier's long-term commitments to the paper industry; further casts us as the only world producer of complete lines of quality bleached wood pulps and chemical celluloses.

See for yourself that claims for JBH are much more than our enthusiasm for a new superior product. Write for JBH samples and literature. No cost or obligation, of course.

And ask your Rayonier sales representative to give you the facts about a Rayonier wood pulp contract. He'll be glad to show you how it will best serve you, now and for the years ahead.

RAYONIER

cellulose chemistry

Rayonier Wood Pulps Used By Papermakers: JBH, Georgianier; Raybond, Rayphoto, Rayweb, Snowhite, Hicolor, Special Acetate, Purayonier, Cordenier, Rayocord X.



Beloit Heavy-Duly Pneumatic Reel A Beloit pneumatic reel makes possible continuous reeling at high speeds, since a new spool is "ready to go" at all times. Density of the parent roll is constantly under control. For other details and advantages, please see following page.



BELOIT HEAVY-DUTY PNEUMATIC REEL

... continuous reeling at high speeds.

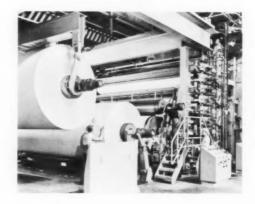
Delicate control of nip pressure throughout the building of a reel.

The Beloit Heavy-Duty Pneumatic Reel makes possible continuous reeling at high speeds, producing rolls of uniform density up to "jumbo size" – 96 inches in diameter.

Beloit reels are engineered for the finest possible service and performance. The reel spool, held in the pneumatically loaded primary arms, is brought to drum speed before transfer of the sheet, providing good tight starts without "spool bounce" or paper loss. The smooth rotation of the roll from primary to secondary reeling position is achieved by a simple motor drive. As soon as the winding reel of paper is transferred from the primary to secondary position, the primary arms quickly return to starting position so that a new spool can be placed and ready for the next roll.

Pneumatically loaded primary and secondary arms, level secondary ways, and cross shaft arrangement provide delicate control of nip pressure throughout the building of a reel. Maintenance is reduced to a minimum by simplified design and rugged construction. There are no complex gear trains for either primary or secondary arms.

The Beloit designed benchboard pro-



vides the operator with simplified convenient controls. There is a Beloit reel designed for every reeling operation—assuring parent rolls of controlled, uniform density for transfer to the unwind stand.

your partner in papermaking BELOIT



PAPER MACHINERY

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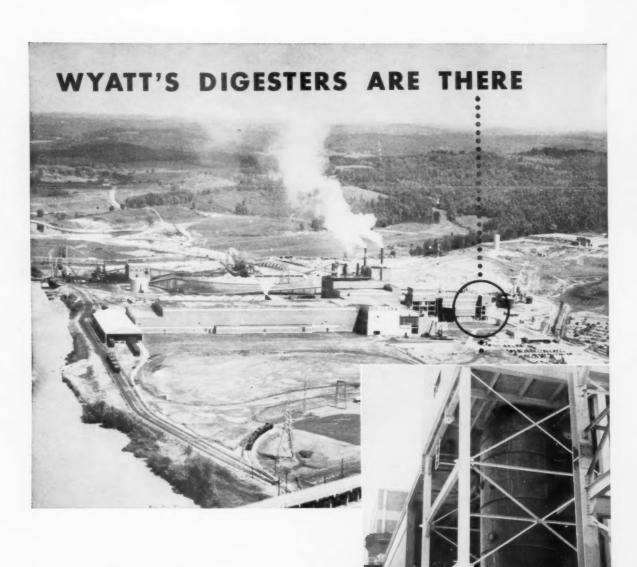
Research at Bauer has

far reaching effects in the pulp and paper industry. Over 6000 laboratory tests and extensive field work have resulted in new processes and new machine designs, to help you produce a better product.

Typical developments include the Bauerite process of making groundwood type pulp from chips, the Bauer-Bale system of preparing pulp for storage or shipment, Pressafiners, Centri-Cleaners, double disc refiners, and pump-through refiners. Typical of the men who have made Bauer industry's headquarters for progress are Dr. Paul Glasoe, Ed Kemp, Al Adams, Ben Perks, and Bernie Vail.

The Bauer Bros. Co. Sheridan Avenue, Springfield, Ohio





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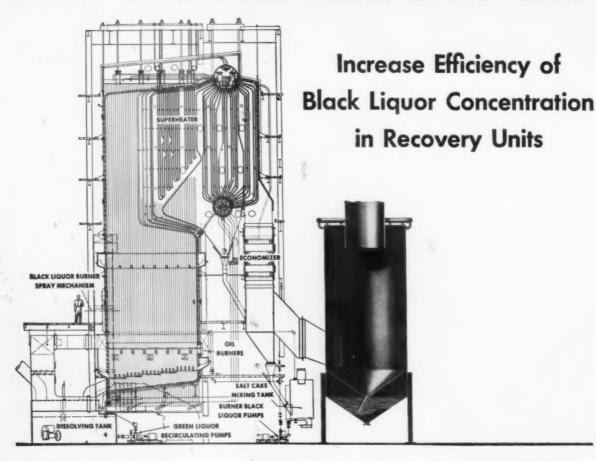
ALBACEL S'ASTRACEL CHEDRINE DIOXIDE BLEACHED SOFTWOOD SULPHATE CHEDRINE DIOXIDE BLEACHED HAADWOOD SULPHATE

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High Availability... No Moving Parts... No Carryover...

B&W CYCLONE EVAPORATORS



The B&W Cyclone Evaporator utilizes the heat in flue gases to concentrate liquor solids being processed in the liquor recovery system. It requires no moving parts to accomplish this.

Hot flue gases are brought into the Cyclone Separator at high velocity in such a way as to give them a cyclonic motion. Black liquor is sprayed in at several points; the inner shell of the cylinder is continuously washed by the droplets thrown against it by the action of the gas, and water is evaporated during this process. Droplets fall by gravity to the bottom, where they are collected. They then go to the recovery furnace. Dependable, continuous service is essential in all parts of the recovery unit. B&W Recovery Units, with B&W Cyclone Evaporators, have proved their value for efficient chemical and heat recovery with low-cost operation. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd Street, New York 17, N.Y.





NC





Keeping a raging killer under control

Scalding steam is a powerful work-saving servant—but let it get out of hand and it can mean sudden death. Yet this valuable, though unruly demon is tamed by a hose that is absolutely safe—U.S. Matchless® Steam Hose. This hose cannot burst—even with steam pressures up to 200 pounds. After long, safe service—far longer than ordinary steam hose—the wall structure, instead of bursting, allows a trickle of steam to merely leak through—reducing the pressure and giving plenty of notice that a replacement is finally needed. Safety councils give U.S. Matchless their full approval.

U. S. Matchless Steam Hose is used in steam lines in every kind of industry. For such a husky hose, it is extremely flexible and easy to handle. The tube is made of specially compounded stock to provide high resistance to heat; the carcass is of braided mild steel wire to give outstanding strength, flexibility and ductility; a synthetic rubber cover resists heat, oil and weather.

U. S. Matchless Steam Hose is obtainable at any of the 28 "U. S." District Sales Offices, at selected distributors, or write us at Rockefeller Center, New York 20, N. Y. In Canada, Dominion Rubber Co., Ltd.



Mechanical Goods Division

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See how you save! INVENTORIES SIMPLIFIED—only one type of insulation to stock. EASIEST TO APPLY—standard methods, regular' tools; cuts quickly without shattering or end-breakage, Refractory-coated smooth surface. RESISTS IMPACT—virtually impervious to shock

There's nothing like UNIBESTOS

If you're not using UNIBESTOS now, it's time to take a new look at pipe insulation. Costs come down all along the line with this all-purpose, long-lasting protection.

Unibertos is quickly adapted for flanges, valves, fittings—needs no canvas cover, no additional protection within buildings. Shrinkage is negligible, even at 1200°, and it may be removed and re-used time after time without damage or loss of efficiency.

Long the world's largest selling high-temperature pipe insulation, today's Unibertos is the one all-temperature pipe insulation. It costs no more, and only one insulation need be stocked on the job.

Small and thin or big and thick, sizes to 44" O.D. Made from long-fibered Amosite asbestos. UNIBESTOS assures outstanding economy, whatever the service or temperature.

HOW THICK SHOULD PIPE INSULATION BE?

and vibration. Built to stay strong indefinitely.

WITHSTANDS MOISTURE, FUMES-insulating

POSITIVE HEAT-LOSS PROTECTION — No shrinkage; calcination and dehydration practically

LOW THERMAL CONDUCTIVITY-means high

HEAT-TIGHT JOINTS—the fibrous nature of Unibestos leads to interlacing between sections for

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dries good as new.

insulating efficiency.

effective heat-sealing of joints.

other double-layer insulations.

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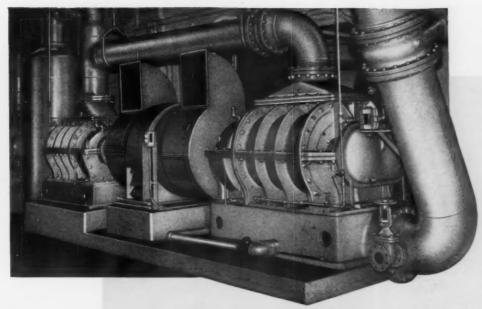
capacity is unchanged by long exposure to various

chemical fumes. Submerged in water for weeks, it

Ask for UNARCO'S free 40-page Booklet F76-312 with exclusive "J" Factor Tables for easy, scientific thickness selection according to cost of fuel, hours of operation, life expectancy of Installation, pipe size, temperature, and cost of insulating.

UNION ASBESTOS AND RUBBER COMPANY

1111 West Perry Street, Bloomington, Illinois



For the world's largest Yankee tissue machine...

Vacuum Pumps keep production rolling at 3000 fpm

At Crown Zellerbach Corporation's St. Helens mill in Oregon, the world's largest Yankee tissue machine, with a 258-inch wire, is producing 100 to 120 tons per day at a speed of 3000 fpm.

To provide the required vacuum for the pressure roll, suction wire boxes, wringer roll, suction couch, pickup and felt conditioners, there are seven Roots-Connersville vacuum pumps to supply approximately 33,000 cfm of air at 10 to 20" Hg vacuum.

Five important operating factors have proved the performance of these R-C Positive Displacement Vacuum Pumps:

Reduced horsepower at higher speeds (600 rpm and up) creates power savings up to 25% and far lower first cost of motors.

Single-stage or two-stage units in capacities for all requirements.

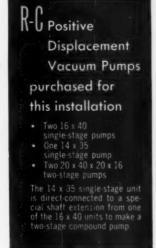
Proved reliability and low maintenance with no internal contacts or excessive wear and freedom from down-time and maintenance.

Minimum sealing water

from 4 to 40 gpm, unaffected by water temperature.

Small floor space

with less expensive foundations and lower cost per cubic foot of capacity.



For evidence of how other leading industrial users benefit from these advantages, write for Bulletin 50-B-13.



857 Willow Ave., Connersville, Indiana. In Canada—629 Adelaide St., W., Toronto, Ont.



Engineered Atmospheres for Better Processing



Credit for this uniform conditioning is due largely to the special stainless steel fine orifice nozzles and the way the steam spray impinges on the web. They're not conventional nozzles in a conventional steam box which merely creates a steam bath. Extensive testing and experimentation preceded the design of this unit to assure proper size of orifice and positioning of nozzles.

Numerous other operational and maintenance advantages highlight the AVISCO Conditioner. It's compact, easily installed, operable in vertical or horizontal position. It has an automatic steam cut-off to prevent over-conditioning should web travel stop.

It can be used as a separate unit or tied into and synchronized with other web-processing operations.

Our Bulletin No. 59 gives complete details. When writing for a copy, please outline your web-conditioning problem. We will be in a better position to offer suggestions. And, of course, we'll be glad to make test runs on your product in our well-equipped laboratory, New Brunswick, New Jersey plant.

If you have any plans for conversion units — coating, embossing, laminating, waxing, etc.— our engineers will be glad to work with affiliated engineers of John Waldron Corporation, New Brunswick, N. J., specialists in Web-Processing



The Avisco Web Conditioner is covered by U. S. Patents 2718065, 525979, 573631

THE ROSS GROUP OF COMPLEMENTING SERVICES

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A melamine resin supplied as a finely divided dry powder, Scriptite 33 imparts high wet strength to many paper products.

Count on Scriptite 33 to increase dry tensile strength and wet rub resistance . . . to improve dry Mullen, wax pick, internal size efficiency, dry stiffness. Scriptite 33 produces papers with strong fold endurance.

Call on the Monsanto Paper Resins Department for experienced assistance in formulating and testing. For laboratory samples of Scriptite 33 and technical bulletin, write Monsanto Chemical Company, Plastics Division, Room 1901, Springfield 2, Mass.

SCRIPTITE



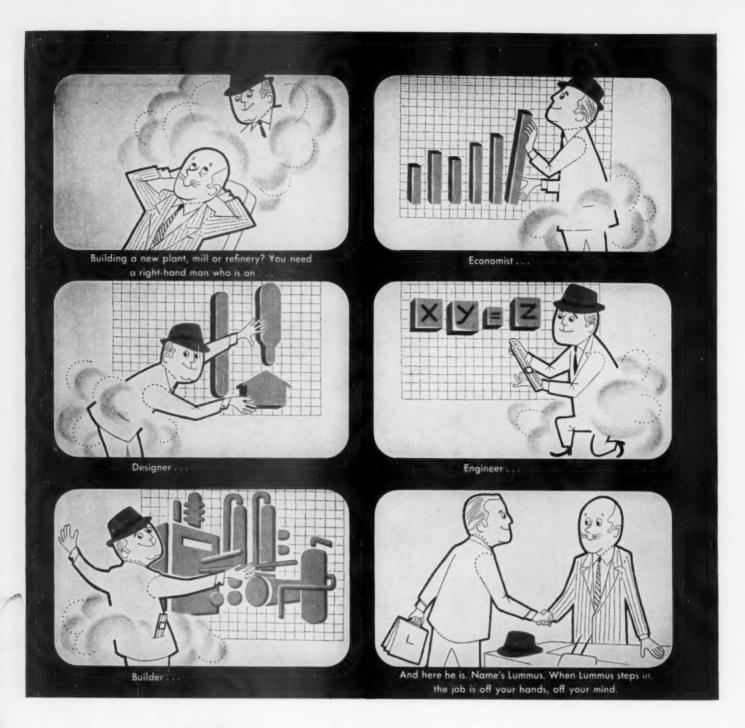
The Monsanto Line of Paper Resins also includes:

SCRIPTITE 40...a urea type wet-strength resin.

SCRIPTITE 50... for unsurpassed printability and improved surface characteristics on boxboard.

SCRIPTITE 52...in combination with formaldehyde to give water resistance to folding boxboard and to jute liner.

SCRIPTITE 54... for outstanding water resistance and both wet and dry rub resistance.



LUMMUS Let Gestge do it

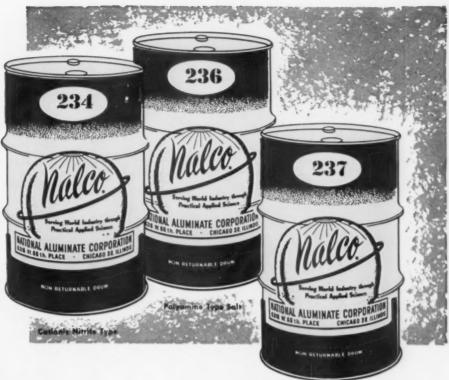
Unfamiliar problems pile up fast when you start planning a new plant. To "do it yourself" is to do it the hard way . . . at the expense of time and energies diverted from regular operations. Instead, make The Lummus Company your right-hand man. From concept to startup you acquire the talents of thousands of specialists, fifty years of world-wide experience. Let the Lummus team take the whole complex job off your hands.

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Three powerful Nalco organic formulations for paper mills give you these important aids toward better paper at lower cost:

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- Deodorizing aids

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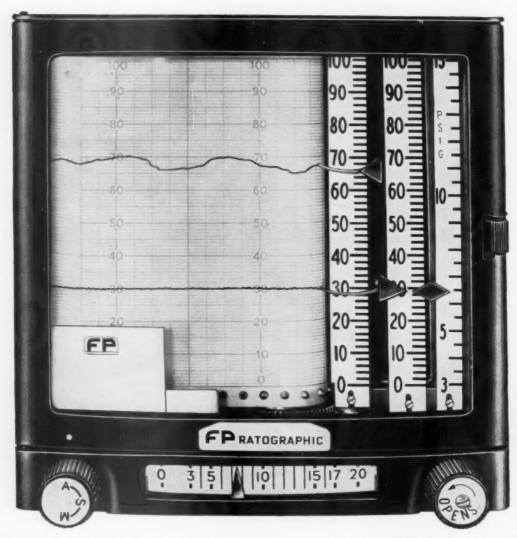
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L OOK at the actual size illustration above. Notice how horizontal chart travel assures quick, easy readability. Side writing pens mean accurate reading of chart record. The entire instrument may be withdrawn from case, making visible a 14 hour chart section, without interrupting operation of the recorder or controller in any way. There are no other instruments like these using full four inch charts.

F&P Ratographic Recorders may be quickly interchanged from the *front* of the panel. Servicing is simple. Automatic seal-off. Consider the continuous chart rewind with handy daily tear-off. Consider the removable pens, fed from an adequate ink supply reservoir. Yes, consider all the F&P Ratographic advantages and

you'll buy no others.

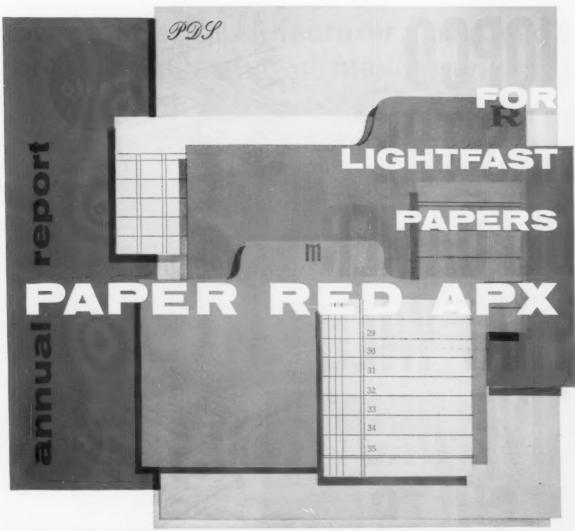
These instruments mount readily on conventional or graphic panels. Specify any of many options and F&P has the answer. A single F&P Ratographic Recorder in use will convince you of their versatility, high accuracy and dependability. That's a firm assurance. Write today for complete information or specific quotations. Fischer & Porter Co., 2187 County Line Road, Hatboro, Penna.

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Catalog 55-20 is a complete, detailed report on the multiple applications, the many options available in F&P Ratographic instruments. Write for it today. No obligation, of course.







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For coloring cover, bond, index, ledger, book and similar papers, GDC's Paper Red APX has no superior in uniformity of quality, consistent color value, and ease of use. You will find papers dyed with Paper Red APX a profitable addition to your line.

- COMPARE THESE ADVANTAGES: ... a non-dusting acid dye for cleaner handling
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For information and samples of Paper Red APX or other GDC paper dyes, write or call our nearest office.





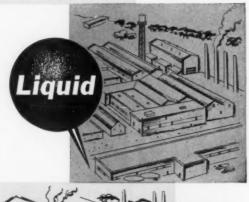
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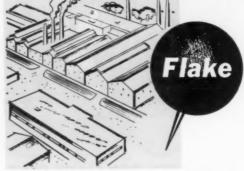
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Paper Red APX manufactured by the General Aniline and Film Corporation is sold outside the United States under the trademark "Fenazo Red A."

NOPCO HAS THE DEFOAMER THAT WILL **GIVE BEST** RESULTS







FOR EACH MILL

Nopco, the first to make a chemical defoamer for the pulp and paper industries, has an unrivalled wealth of first-hand experience, and the widest range of defoamers...paste, liquid, and flake. One thing we know for sure—there's no such thing as a defoamer that works equally well in every mill. Local conditions vary too much.

That's why we prefer to analyze a sample of white water from your mill. We test it with every potentially effective defoamer—including if you like, the one you are now using. When we have finished our exhaustive tests, we are able to determine scientifically and impartially, which defoamer will give your mill the even fiber distribution,

fewer breaks, higher machine speeds, and improved sheet formation that you should have.

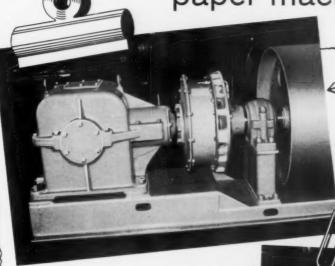
What you want is the absolute minimum of foam in your operation. If you haven't given Nopco a chance to "prescribe", you can't be sure you have that absolute minimum. Why not consult Nopco Chemical Company, today?



PLANTS: Harrison, N. J. Cedartown, Ga. • Richmond, Calif. London, Canada

how a paper manufacturer <u>improved</u> production, <u>reduced</u> maintenance

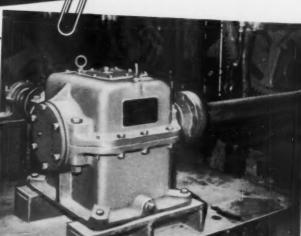
with **Western Gear**paper machine drives



Western Gear furnished two new calender drives for the Crown Zellerbach Camas, Washington division consisting of a right angle speed reducer, Cone pulleys for both the machine floor and line shaft and air operated clutches. The replacement of old style bevel gears will materially reduce maintenance problems and permit better production control.

Eleven Western Gear right angle spiral bevel speed reducers were chosen to drive the modernized paper machine at Crown Zellerbach Lebanon, Oregon division. Production was substantially increased because of greater drier capacity and stepped-up machine speed contributed by the Western Gear spiral bevel speed reducers.

We are very proud of Western Gear's widespread acceptance by major paper manufacturers, who come to us for quality power transmission equipment.



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Address.

West End SALT CAKE merits your confidence for its consistent purity

Here is the new high standard of salt cake quality achieved by exclusive West End production techniques and controls. The product is pure white and exceedingly low in heavy metal content. It is guaranteed 99½% minimum Na₂SO₄ yet actually runs 99.75% to 99.8% Na₂SO₄ typically. We invite your attention to the adjacent typical analysis and welcome your communication.

TYPICAL ANALYSIS



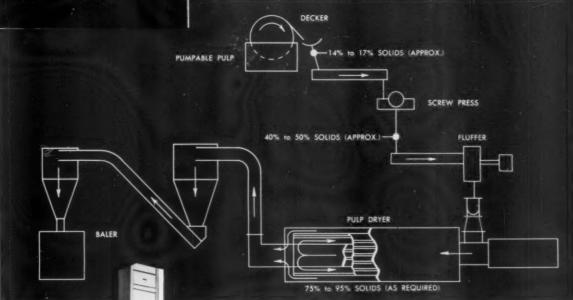


West End Chemical Company

DIVISION OF STAUFFER CHEMICAL COMPANY EXECUTIVE OFFICES, 1956 WEBSTER, OAKLAND 12, CALIF. PLANT, WESTEND, CALIF.



The NEW way to prepare pulp for shipment or storage...



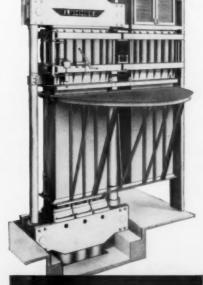


This special Lummus high density baling press streamlines handling of pulp prepared for shipment or storage by the new Bauer-Bale system, developed by The Bauer Bros. Co.

It is a continuously operating, two-station hydraulic press. Over 1,300,000 pounds compresses the dried pulp into 2' x 2' x 4' bales weighing about 700 pounds, at the rate of one every four or five minutes. Automatically regulated, bale density is 45 to 65 pounds per cubic foot, meeting all loading requirements.

The compact bales will withstand rough treatment and can be shipped with or without straps or protective wrapping. Uniform in size, shape and weight, the highly compressed bales can be moved easily with hand dollies, fork lifts or conveyors. The time and labor savings provided by this Lummus press make it an economical asset to the Bauer-Bale system.

Lummus Cotton Gin Co. Columbus, Georgia



For the descriptive bulletin on the Bauer-Bale system, write to The Bauer Bros. Co., Dept. L, Springfield, Ohio.





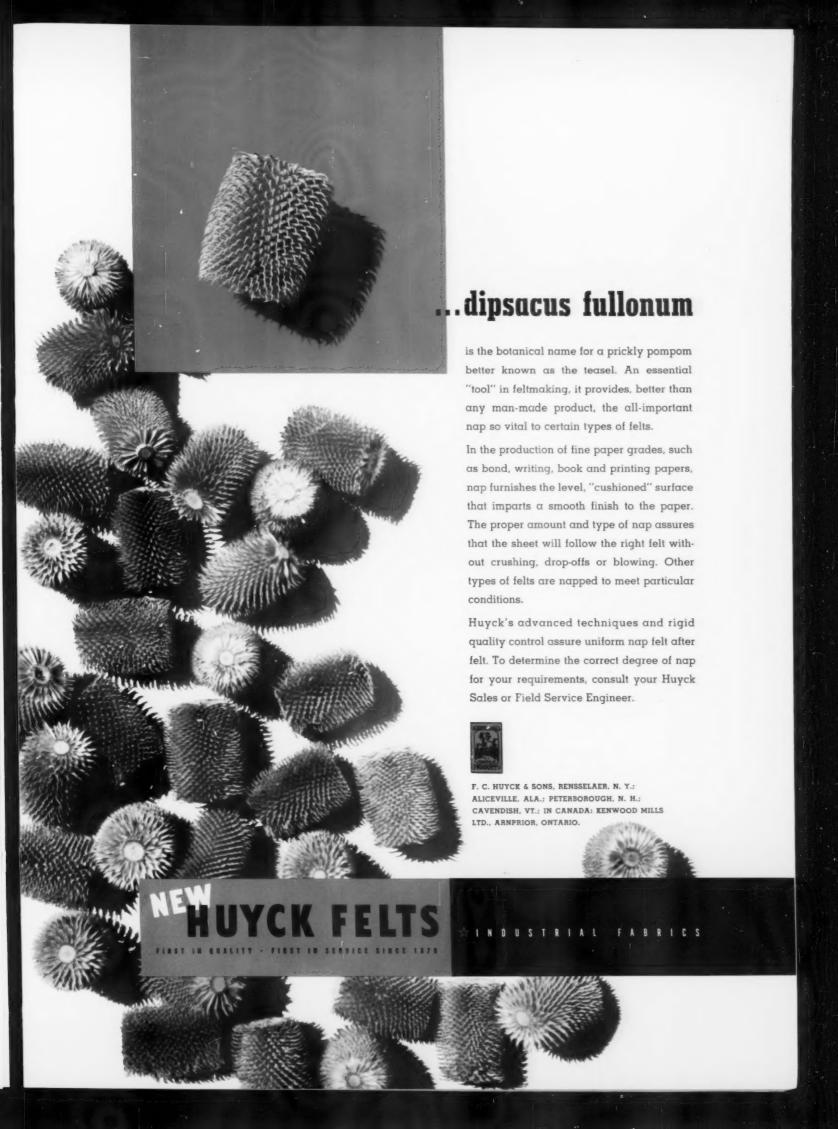
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in 60 cities in the United States, Europe,
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A new line of Standard Oil greases

GREASE

Major breakthrough in grease technology results in development of new thickening agent. New grease has greater high temperature stability, superior multipurpose qualities, improved lubricating properties.

Standard Oil instituted a grease research and development project several years ago. The result of this work is the line of RYKON Greases, which contain a unique new non-soap, organic thickening agent.

RYKON Greases surpass in stability and performance the best greases made up to this time. They bring to industry new opportunities for improved machine performance. They greatly reduce the maintenance and grease handling problems encountered in industry.

RYKON Grease properties

RYKON Greases are smooth, buttery-textured greases, made from the finest quality, solvent-extracted oil. Their thickening agent is a Standard Oil exclusive. RYKON Greases have these high-quality characteristics:

High temperature stability—Better heat stability than any other petroleum oil grease. ASTM dropping point of 480°F. Maintain consistency in service at high temperatures.

Mechanically stable—Maintain consistency even under severe mechanical working in service.

Chemically stable—Inhibit oxidation. Oil and thickening agent in combination possess extremely good chemical stability.

Check Chart Of RYKON Greases

	Regular Line	Grade Consistency
	RYKON Grease No. O	0
	RYKON Grease No. 1	1
	RYKON Grease No. 2	2
	RYKON Grease No. 3	3
	Heavy Duty Line	
	RYKON Grease No. O E. P.	0
1	RYKON Grease No. 1 E. P.	1
100		

Wide temperature range—Lubricate at high and low temperatures. Extended range of application thus obtained makes RYKON Greases truly multi-purpose.

Water resistance—Do not lose consistency in presence of water. Highly resistant to water washout.

Oil separation—Minimum bleeding of oil in service and storage.

Anti-rusting—Exceptional natural rust preventive characteristics.

With RYKON Greases, lubrication can become simple, foolproof and less expensive—much less expensive, perhaps, than a single shut down caused by equipment failure due to the use of the wrong type of grease or the use of an "economy" grease lubricant.

RYKON Greases come in four Regular and three Heavy-Duty grades. Thus there is a RYKON Grease to take care of every grease lubrication job. Using RYKON Greases plant-wide can reduce your grease storage requirements, simplify lubrication maintenance training, cut down record keeping, save on dispensing equipment and reduce investment in grease inventories.

Get more facts about RYKON Greases. Call your nearby Standard Oil industrial lubrication specialist in any of the 15 Midwest or Rocky Mountain states, Or write Standard Oil Company, 910 South Michigan Avenue, Chicago 80, Illinois.



STANDARD OIL COMPANY (Indiana)

Latest Mill Results	SEPARAN 2610 lb. / ton	CLAY	TiO ₂	ASH %	OPACITY %	NET SAVINGS \$ / ton WITH
55 lb.	NONE	530	0	7.3	88.0	SEPARAN 2610
ENVELOPE	0.5	310	0	10.3	90.2	4.50
60 lb.	NONE	550	30	12.2	92.0	
OFFSET BOND	0.5	400	30	13.7	92.0	2.00
25 lb.	NONE	50	150	12.2	77.0	
CARTON WRAP	0.75	50	125	13.2	76.0	5.50
50 lb.	NONE	370	145	9.6	89.0	
OFFSET BOND	0.6	145	100	12.6	90.5	12.00

Separan 2610 saves \$2.00 to \$12.00 per ton of paper

Tabulated above are mill results obtained on various papers with Separan 2610 as a filler retention aid. These savings tell only part of the story . . .

A synthetic flocculant of constant uniformity, Separan 2610® is proving the answer to many problems in pulp and paper manufacture. It is truly a revolutionary flocculant—easy to prepare and apply—requiring no preservative. It's effective over a wide pH and temperature range, is non-corrosive, and presents no hazard in normal use.

For your further evaluation of Separan 2610, a more complete and expanded report has been prepared titled "Separan 2610 in the Pulp and Paper Industry". In addition to

filler retention, it reports on how this new Dow flocculant is saving money and improving other mill operations . . . in flotation type save-alls, white liquor or bleach liquor clarification, white water clarification and raw process water



treatment. For your copy of this booklet, and/or a sample of Separan 2610, write the dow chemical company, technical service and development, Midland, Michigan, Dept. SC 1317D-2.

YOU CAN DEPEND ON



Two Disc American Saveall

Unusual Size Unit Handles 650 GPM with Excellent Clarity Results...

Probably the most unusual Saveall in the paper industry today is the 7' dia. by 2 disc American Saveall at Hudson Pulp & Paper Company's Augusta, Maine mill. Unusual because it is the first known Saveall of this unique size; and because it was a unit designed for the mill's requirements — not vice versa.

This 2 disc Saveall is currently closing a machine which makes colored tissue from straight unrefined sulphate. Designed to handle 500 gpm and produce a clarity of 0.18 lbs./1000 gal., this small unit has handled up to 900 gpm with excellent clarity results.

American (Disc-Type) Savealls are available in two diameters — 7 and 9 feet. From 2 to 8 discs are available in the 7' dia. units and from 4 to 12 discs in the 9' dia. units.

One of the outstanding advantages found in American Savealls is the large filtering area and high capacity with floor space saving. The 7' dia. by 8 disc Saveall has 560 sq. ft. of filtering area and occupies only $8\frac{1}{2}$ ' by $15\frac{1}{2}$ ' of floor space. The 9' dia. by 12 disc unit with a filtering area of 1,350 sq. ft. requires an area of only 23' x 12'.

For more information on the American Disc-Type Saveall write for Bulletin No. 701-R, Dorr-Oliver Incorporated, Stamford, Connecticut.

American Trademark Reg. U. S. Pat. Off.



Sluicing jets cut under the sheets and peel them off. The recovered white water fines and valuable fibres are then returned to the stack chest with the sheet, and the clarified white water is available for reuse.



at HUDSON

Pulp & Paper Co.



PULP & PAPER — August 1957

Longer Life Faster Drying

SCAPA Synthetic Reinforced* Cotton Dryer Felt

Type #1164-S and #1166-S

Running up to double life of competitive cotton felts outrunning asbestos felts in many cases—bringing the advantage of faster drying found only in cotton felts.

Scapa staggered-butt clipper seam using synthetic tapered webbing is engineered to give the extra life required from these longer running Scapa felts.

Prompt, dependable shipments from our new mill at Waycross, Georgia, including all widths from the smallest felt through the widest felts in the country.

*U.S. Patent Application Serial No. 524410

Can be furnished with our famous

GREEN DACRON EDGE

GREEN DACRON edges

when desired (U. S. PATENT 9,612,190).

These reinforced edges of pure,

spun Dacron will outwear the felt,

spun Dacron will outwear conditions.

under the most severe conditions.

Morey Paper Mill Supply Company
309 SOUTH STREET, FITCHBURG, MASSACHUSETTS
Sole U.S. Agents for

SCAPA DRYERS, INC.



JACK B. RINCKHOFF (right), Chief Engineer, Sulphuric Acid & Phosphates Dept., Chemical Construction Corp., N. Y. City. Left, Michael De Piane, New York Cooper Alloy Representative.

RINCKHOFF OF CHEMICAL CONSTRUCTION answers 3 questions on Cooper Alloy Valves

Q. Mr. Rinckhoff, in specifying equipment for the H₂SO₄ plants that Chemico constructs around the world, what Cooper Alloy valve models do you buy most of?

A. Over 80%, I'd say, are OS&Y type gate valves, in sizes 1"to 8"

Q. What's your most important reason for

buying Cooper Alloy valves?

A. Availability. Your chain of distribu-tors across the country and in remote parts of the world is of great importance to us. In foreign construction we have often specified Cooper Alloy because of this all-important availability

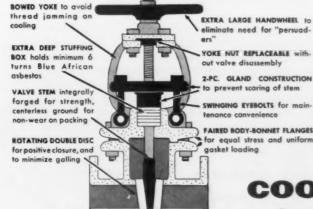
Q. What about design and quality?

A. Vital. Valve design determines performance, and our specifications are rigid. As a construction company, we can't afford to jeopardize our reputation by installing questionable equipment. Cooper Alloy valves have passed our tough specs, and have my approval for all severe construction applications.

A VALVE DESIGNED FOR STAINLESS!

The Cooper Alloy valve is not an adaptation of earlier brass and iron patterns. Cooper Alloy, with over 35 years of experience in handling stainless steel, created a valve designed to be cast in stainless! Check the Special Design Features shown at left.

As the little CA man below is saying: "You can tell a Cooper Alloy Valve as far as you can see it!" Write today for your copy of our folder "Design Factors In Stainless Steel Valves." The Cooper Alloy distributor near you will be glad to show you the complete line of Cooper Alloy valves and fittings, and their advantages. He can serve you promptly from local stocks.



to prevent scoring of stem SWINGING EYEBOLTS for main-

FAIRED BODY-BONNET FLANGES for equal stress and uniform



Corporation . Hillside, New Jersey VALVE & FITTING DIVISION

THIRTY-FIVE YEARS OF STAINLESS STEEL PIONEERING



New Fast's Breaking-Pin Jordan Coupling eliminates seizure and overload damage

Fast's Breaking-Pin Jordan Coupling reduces your maintenance costs...eliminates expensive shutdowns and production stoppages by protecting expensive equipment.

Fast's Breaking-Pin Jordan Coupling protects both motor and Jordan when the plug is inadvertently drawn too tightly, or when hard foreign matter enters the Jordan and jams the knives. Fast's breaking-pins fail only by torsional overload, never through shaft misalignment. By close control of a specially selected breaking-pin material and laboratory analysis, uniform breaking-pin performance is assured. When your Jordan shaft becomes overloaded or knives jam, the pins

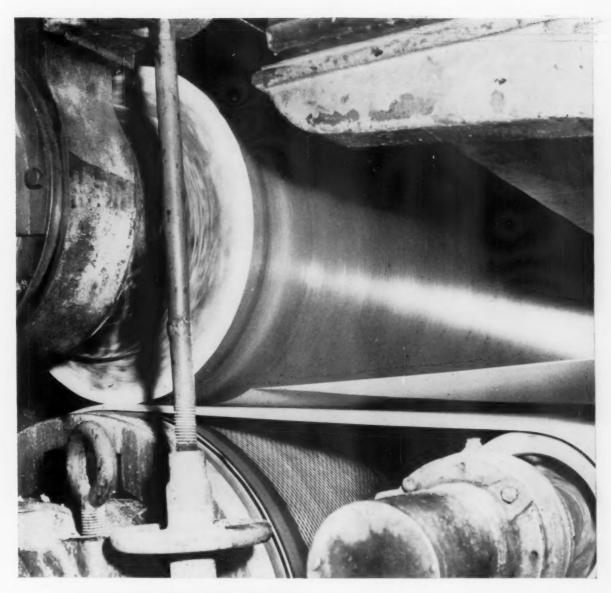
break at their calibrated center section. After failure, the two halves physically separate. The breaking-pins cannot fly out but are easily removed and replaced.

Koppers engineers will be glad to analyze your coupling problems, and specify a Fast's Breaking-Pin Jordan Coupling to meet your needs. Available in 9 standard sizes for shaft diameters from 2½ through 7 inches. Discover how you can save maintenance time and costs and avoid profit-consuming delays by writing: KOPPERS COMPANY, INC., Metal Products Division, Fast's Coupling Dept., 2708 Scott Street, Baltimore 3, Maryland.

Engineered Products
Sold With Service



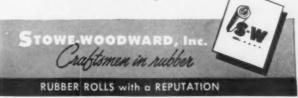
FAST'S Couplings



high production speeds depend on clean sheet release...like this

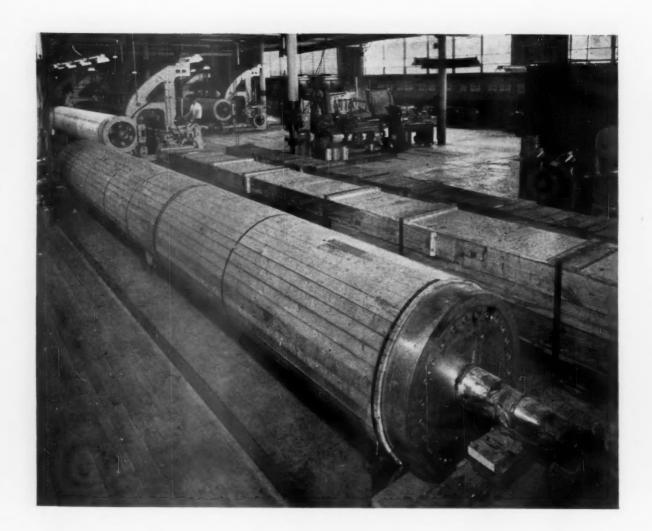
Perhaps the one most important quality sought in press rolls is the ability to release the paper web cleanly, and without any trace of picking or sticking. To insure this quality in the rolls which they buy, and to further insure other desirable features such as proper "nip", "cushion" and longer life on the machine, a majority of the country's leading mills and machine builders have learned to consult their Stowe-Woodward Sales Engineer.

Complete roll processing plants at:
NEWTON UPPER FALLS, MASS.
NEENAH, WISCONSIN
GRIFFIN, GEORGIA



New York office: WOOLWORTH BUILDING, NEW YORK 7, N. Y.

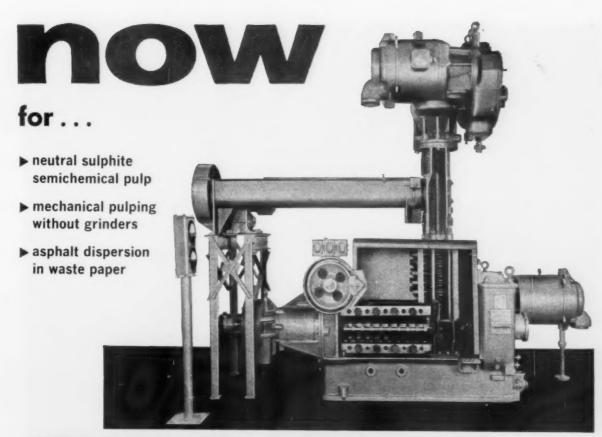
On the West Coast: HUNTINGTON RUBBER MILLS, INC., SEATTLE



Six looms in the 290" to 340" size range are in operation at the Appleton Wire Works. Here, ready for erection, are crated rolls for the seventh — a 340" loom scheduled for operation in September. The eighth loom in this size range will be installed and operating by the end of 1957. These are *new* manufacturing facilities provided by Appleton Wire Works in the past two years to meet the changing requirements of the paper industry. Appleton Wire Works, Inc. General Offices, Appleton, Wis. Plants at Appleton and Montgomery, Ala. International Wire Works, Menasha, Wis., an affiliated company.

APPLETON WIRES ARE GOOD WIRES



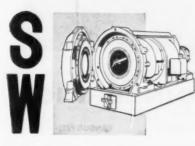


FIBERPRESS

The FiberPress is a screw press of very heavy construction. It has two important functions: black liquor removal and fiberizing action. Both are very important in semichemical mill operation. At least 8 FiberPresses will be in operation in these applications in U. S. and foreign mills in 1957.

The FiberPress, followed by the SW refiner, forms a mechanical pulping system that produces superior quality mechanical or chemimechanical pulp from chipped or hogged conifers and hard woods.

For lighter applications: the SW-Anderson Moisture Expeller.

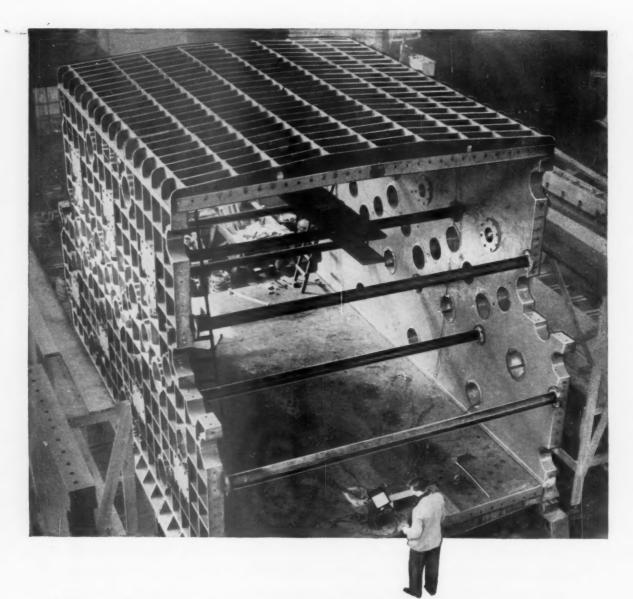


For careful analysis and specific recommendations, send your pulping problems to Sprout-Waldron. Address: Sprout-Waldron & Co., Inc., 32 Logan Street, Muncy, Pa., U.S.A.

SPROUT-WALDRON

MODERN PULP PRODUCTION EQUIPMENT

PP/412



The Pulp Drying Machine

at Hinton, Alberta, is a

DOMINION

The strain gauge test, here being performed on a section of the vacuum chamber for the Dominion Vacuum Drying Pulp Machine, is typical of the modern methods employed by Dominion Engineering to ensure that its products maintain the high standard of performance established over the Company's many years of service to the Pulp and Paper Industry.





DOMINION ENGINEERING

COMPANY LIMITED

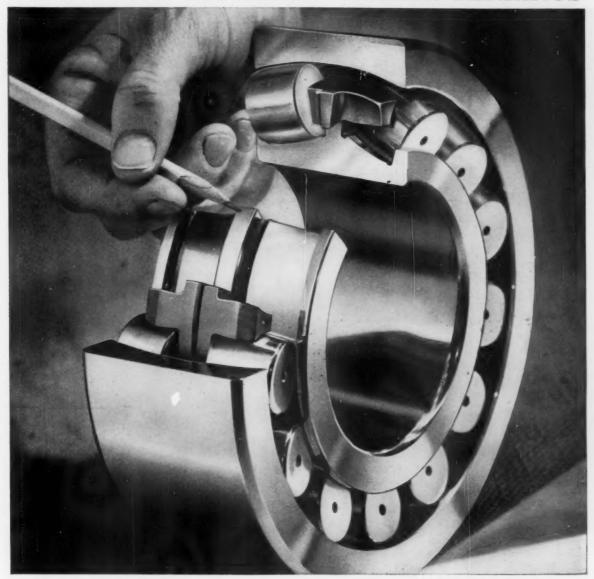
MONTREAL

TORONTO

WINNIPEG

VANCOUVER

TORRINGTON SPHERICAL ROLLER BEARINGS



"This flange guides the rollers to peak performance!"

The center flange on the inner raceway of the Torrington Spherical Roller Bearing positions the rollers to handle thrust loads. This accurate positioning also assures radial stability of the rollers under heavy loads—even at continuous high speeds and under conditions of misalignment.

This superior design feature is only one of many advantages you get when you specify TORRINGTON. For example, you get the service of TORRINGTON'S experienced engineers, who will help you with design and maintenance problems—or design custom bearings for special applications.

For long, low-maintenance service in heavy-duty applications, order TORRINGTON Spherical Roller Bearings. They're available from stock with either straight or tapered bore, for shaft or adapter mounting.

THE TORRINGTON COMPANY
South Bend 21, Ind. • Torrington, Conn.

District offices and distributors in principal cities of
United States and Canada

TORRINGTON READINGS

Spherical Roller • Tapered Roller • Cylindrical Roller Meedle • Ball • Needle Rollers

At Weyerhaeuser's new sulphite mill:

By -built Digesters and Accumulators

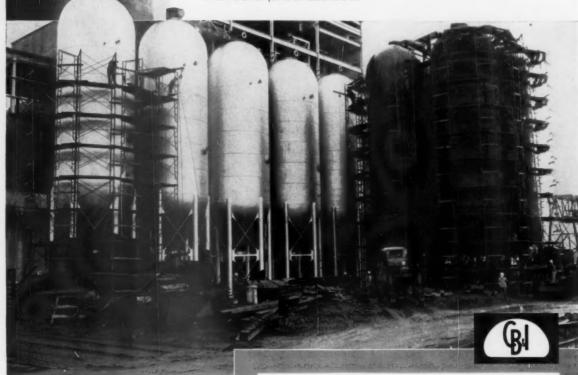
are field erected and stress relieved

CB&I Field Services went to work at Weyerhaeuser's new 400-ton sulphite pulp mill—recently completed at Cosmopolis, Washington. The 7 CB&I digesters and 4 accumulators were stress relieved in the field. All welds were similarly checked by specially designed, non-destructive X-ray examination equipment.

By erecting as well as fabricating structures such as those completed at Weyerhaeuser, CB&I is able to offer its customers an exceptionally high degree of quality control between the shop and field. Our field service program offers experience, equipment and on-the-job know-how to handle your most specific requirements. Write our nearest office for the new bulletin on *Field Erection Services*.

Top: CB&I specialist uses portable X-ray machine for examination of seam welds.

Left: Automatic (patented) girth welder being adjusted for welding circumferential joints on accumulator.



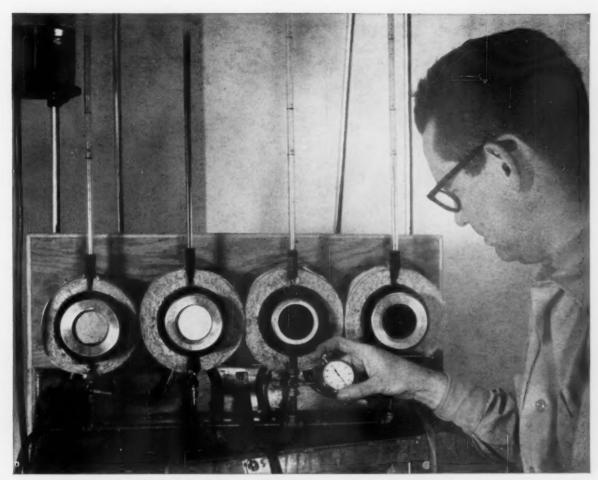
Left: 60-foot high digesters are 17 feet in diameter.

Right: Four accumulators have 1,290 cubic foot capacity each.

Chicago Bridge & Iron Company

Atlanto • Birmingham • Boston • Chicago • Cleveland • Detroit • Mouston

New Orleans • New York • Philadelphia • Pittsburgh • Salt Lake City
San Francisco • Seattle • South Pasadena • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.



FOOD CONTAINER BOARD (at left) sized with 3% rosin compared on a penescope with food board sized with 2% Mersize. Note visible proof of the high sizing efficiency and greater water-resistance gained with Mersize.

Having trouble meeting penescope tests? Use Mersize

"Now we have no trouble meeting our penescope specifications." That's what Monsanto technical service men hear from food container board mills using Mersize.

From the day you begin using Mersize, you'll see the moneysaving difference. You'll meet penescope specifications on the first try more often. You'll save time, extra work, and get more consistent, high-quality production.

Mersize is chemically tailored to give you dependable, uniform sizing. With Mersize you can rely on greater resistance to liquids with less size . . . and results will be more uniform day after day. A mill trial will prove it to you.

Out of every 10 mills that have given Mersize a thorough mill trial, 9 have become steady users.

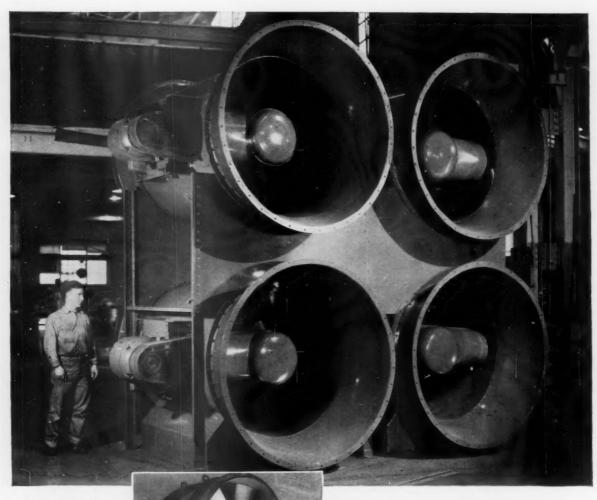
> Organic Chemicals Division MONSANTO CHEMICAL COMPANY Dept. PC-76, St. Louis 1, Missouri

MERSIZE gives you 20% to 30% lower sizing costs

Better sizing with less size solids Low air stabilization factor High resistance to feathering More uniform sizing of hard-to-size pulps MERSIZE: Reg. U. S. Pat. Off.



WHERE CREATIVE CHEMISTRY WORKS WONDERS FOR YOU



COOLING PACKAGE!

Now cooling a large boiler room to complete satisfact on, these 4 "Buffalo" Axial Flow Fans shown above were made up as a unit "package" for simplified installation. Quiet and highly efficient, they move a lot of air—and remove a lot of excess heat!

210,000 CFM ACID FUME HANDLER!

Giant 96" stainless steel "Buffalo" Axial Flow Fan at right, with cast Aluminum wheel, in a rayon mill in India. One of four in the same mill, ordered over a period of six years.

IN-STACK EXHAUST!

Here at lower right, "Buffalo" Axial Flow Fans mounted right into stacks at a paper mill do a thorough job of exhausting vapors. Duct-size design is a big installation advantage of these fans.

WRITE for Bulletin 3533 to check the performance and installation advantages of these job-proved fans.

WHY "BUFFALO" AXIAL FLOW FANS?

Efficiency and quiet operation — extreme efficiency where duct connections are straight, to take advantage of straight-line axial air flow. Guide vanes in "Buffalo" Vaneaxial Fans eliminate swirling motion of air — convert this energy to forward thrust. Varied pitch of "Buffalo" airfoil wheel means uniform air flow over the blades.

Installation advantages include lighter weight with rugged construction and cylindrical shape. "Buffalo" Axial Flow Fans are simple to install as part of round ductwork—and require less support than centrifugal fans of equivalent capacity. Available direct-connected, or V-belt driven thru streamlined fairing with motor outside of air stream.



BUFFALO, NEW YORK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Buffalo

VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING



How to get

uniform stock out of a big chest

You can stop stratification of stock, even in the largest chests, with LIGHTNIN "custom power"

This mixing method, proved in more than 35 mills, accurately equates mixer horsepower with the job you want to do.

You get the exact level of mixing that's best for what you want to accomplish in one chest or in a series of chests. There's no guesswork.

Mixing results are fully predictable, unconditionally guaranteed.

You can get LIGHTNINS for your stock chests in sizes up to 500 HP. At each power level, there's a choice of impeller sizes and speeds to match your mill economics.

For quick, competent help on stock chest mixing that does what you want it to, call your LIGHT-NIN Mixer representative. Or write us direct.

> mechanical seals for pressure and vacuum mixing

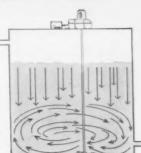
Lightnin Mixers.

MIXCO fluid mixing specialists

FOR LATEST MIXING INFO	MATION and full	description of LIC	GHTNIN Mixers, send
for these helpful bulletins:			
B-102 Top or bottom enter-	□ B-104 Side ent	ering: 1 to DR-	111 Quick-change rotary

- ing; turbine, paddle, and propeller types: 1 to 500 HP 20 HP
- B-103 Top entering; propel-ler types: ¼ to 3 HP
- B-108 Portable: 1/8 to 3 HP
- ☐ B-112 Laboratory and smallbatch production types
- ☐ B-107 Data sheet for figuring ☐ B-109 Condensed catalog general mixer requirements Paperstock mixing data sheet showing all types
- Check, clip, and mail with your name, title, company address to:

MIXING EQUIPMENT Co., Inc., 141-h Mt. Read Blvd., Rochester 11, N.Y. In Canada: Greey Mixing Equipment, Ltd., Toronto 10, Ont.



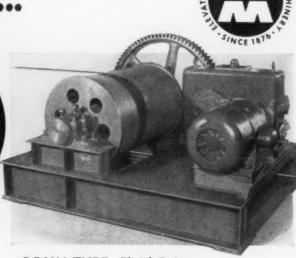
USE THIS MIXING METHOD to



THIS LIGHTNIN MIXER DRIVE with the above propeller delivers 200 HP to the stock with high efficiency. Newly installed, it duplicates an existing LIGHT-NIN installation in this same mill which has produced completely satisfactory results for the last 5 years.







One-man operation, always ready, always safe, push-button control.

WEBSTER Car Movers are made in a complete range of sizes in fixed and portable capstan, drum, and continuous types. Years of dependable service are assured by rugged frames and castings, extra-heavy machine-cut gears, and weather-proof construction.

Write for Bulletin 60E.

WEBSTER MANUFACTURING, INC.
Dept. PP-87,

Dept. PP-87, TIFFIN, OHIO

DRUM-TYPE, Fluid Drive

This 50 hp WEBSTER Car Mover was supplied for a prominent paper company in Pensacola, Fla., and similar unit for terminal grain elevator in New Orleans, La. It is capable of moving fourteen 75-ton railroad cars along a straight track, up a 1% grade, at a speed of 40 ft. per minute. Fluid drive provides shock-absorbing cushion between motor and gears, prevents damage from overloading, and eliminates necessity for expensive controls.

VERTICAL CAPSTAN-TYPE with Integral Motor



The diameter and length of capstan on WEBSTER Car Pullers are designed to give long life to the ropes, and provide the necessary traction for pulling the load—with little effort on the part of the operator. A hightorque, totally enclosed hoist-type, non-ventilating motor is an integral part of the unit. Available in two standard sizes of 5,000 or 10,000 pounds rope pull at 40 feet per minute.





Best little woods worker yet...best buy, too!

All the features you want and need for your work are in this new OC-4—just as if you drew up the specs yourself!

Successor to the famed Oliver OC-3, this new model lifts performance to its highest level yet for tractors this size. It has the practical, compact size that makes working the most difficult areas a snap. New, protected crawler design with four lower track wheels gives it maximum ground contact...exceptional traction.

Heavy-duty 4-speed transmission delivers the widest speed selection for any condition—a low $1\frac{1}{2}$ m.p.h. for steady progress through soft ground with full load behind...to lively $5\frac{1}{2}$ m.p.h. for getting places fast. Big 9" clutch is a smooth-working marvel ...and longest lasting.

The modestly priced OC-4 will bring more than new speed to your operation—it will save you real money with its efficient, dependable, hard-work eagerness. 21.85 d.b.h.p. gasoline engine. Mounts winch, dozer, loader—whatever attachments you want. See your Oliver distributor and try the OC-4 yourself. Or write for information.



OLIVER OC-12 is tops for woods work in its 53 d.b.h.p. range. A rugged, economical crawler complete with Oliver POWER-TURN—the better idea in tractor steering that gives you power on both tracks all the time, even on turns. Ask about it.



THE OLIVER CORPORATION

400 West Madison Street, Chicago 6, Illinois

a complete line of industrial wheel and crawler tractors and matched allied equipment

PULP & PAPER

Pulpwood Section



Rubber-Tired Behemoth—the Michigan Logger



Four Foot Logging with Bombardier J-5

Northeast Loggers Inspect New Equipment

PULP & PAPER's pictures show how units operated for APA group in Adirondacks under difficult conditions

That's what pulpwood men want to see. . . . How equipment performs on location, handling the same type of wood he handles, under conditions approaching his own.

That's what the Northeastern Technical Committee of the American Pulpwood Assn. saw in June. They selected as the proving grounds a location in St. Regis Paper Co.'s Experimental Forest at Tooley Pond, N.Y., (near Cranberry Lake in the Adirondacks)

Rugged terrain was the order of the day. So, too, were mudholes, rocks and boulders.

Equipment representatives asked no quarter. One fellow did have a tough time picking up some hardwood with his rig, explained, "this usually doesn't happen." But it was just the

Guiding Hands . . .
From left are WILFRED McKAY, Eastern Corp., vice-chairman of Northeastern Committee; JOHN T. MAINES, Great Northern Paper Co., chairman, and JIM HENSEL, APA, secretary-treasurer.

"usually doesn't happen" that these men wanted to see.

One woodsman whispered to his buddy, "Let's see how they make it through this mudhole." Churning back and forth over what might have been called a water course, Bombardier's J-5 tractor deftly negotiated a load of pulpwood on a trailer. One company was so impressed that it bought the relatively low-priced (around \$4,700) unit on the spot.

The Bombardier is new to U.S. operations, is made by Bombardier Snowmobile, Ltd., Valcourt, Que. The J-5 without trailer weighs about 2,950 lbs. It is rated highly for its flotation, which makes it particularly adaptable for swamp work.

The Canadians' Ideal

It was another Canadian product which captured imaginations of the APA group. Purring uphill from the depths of a swamp-like logging chance, Clark's Michigan Logger loomed like a behemoth above the crowd. This is the unit developed by Canadian pulp and paper companies in cooperation with CPPA, as the ideal piece of equipment for woods operations. Pulpwood men liked the ease with which the Logger moved along.

One safety hazard spotted: too much glass in the cab frame. "One protruding branch," pointed out a woodsman, "would sprinkle glass all over the operator's face." Another pulpwood manager watched the Logger perform, remarked: "That rig is all right—for 4-ft. wood. But we're handling hardwood now and it doesn't make sense to handle 4-ft. wood."

This, of course, is a moot question in the Northeast. Four-ft. wood was designed for softwood. Now, hardwood is being used. Ever try to handle a stick of hardwood? Its too heavy for a man to handle day in and out.

Tree Lengths are Trend Now . .

There's an advantage to handling tree-lengths. More production. By streamlining operations and putting them on an assembly line basis, you get better use of equipment. Your tractor isn't standing idle while you're loading 4-ft. wood. One man can fell trees, another skid and a third buck logs at a central point. Also, you can integrate your operations, obtain higher return by putting premium wood into sawtimber.

Some features of the Logger: Allwheel drive, planetary-wheel axles, torque converter, power-shift transmission, four speeds forward, four in reverse, and hydraulic power steering. The operator can steer from two positions. He merely swings his seat around to the alternate steering wheel.

Oliver OC-4 Shows Off .

Oliver Corp.'s new OC-4 blithely churned up and down one of the hauling roads with full-length logs gripped securely in tow with a Carco winch. Time and again it negotiated bad mudholes. The Oliver OC-4 is relatively new. Its features are: Four lower track wheels for maximum



In Search of a Better Logging Tool . . .

John Deere's 420 Crawler shows off No. 62 bulldozer blade by having it lift front end of tractor off ground. Blade can also be





Considerable interest was shown in this wooden pallet system adapted for Northeast operations by West Virginia Pulp and

ground contact; heavy duty 4-speed transmission; Speed range from 1.5 to 5.5 mph.

Deere's 420 Pleases . . . John Deere had its 420 crawler in operation-dozing, snaking and frontend loading. A pulpwood manager observed that this unit is low cost, light but rugged, ideal for the small farmer.

The No. 62 angle blade for dozing can be tilted right or left to a 35° angle, can be raised for pushing down trees. Brand new with Deere is a log loader with a capacity of 4,500 lbs.



Hot off the production line is this log loader for front end loading





Front and rear driving advantages of Clark's Michigan Logger is shown as operator switches position to ease load into turning around area.

What Makes a Good

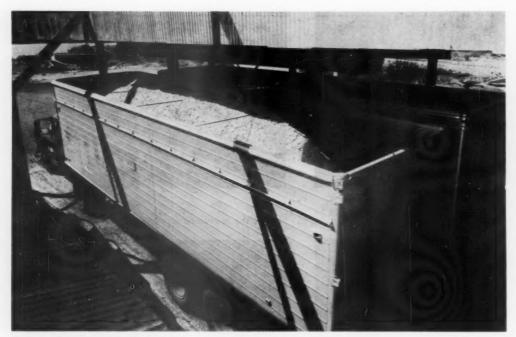
Pulpwood Producer? . . . This was a panel session in which outstanding producers (as uncovered by a recent APA survey) were described. Some examples:

In Upstate New York a four-man crew, on a year-round operation, has racked up three years without a losttime accident. Their production averages three cords per man-day.

A novel feature is the use of a horse (unattended) for skidding. This balanced organization (it also uses quite a bit of mechanized equipment) produces about 40 to 50 cords in a fiveday week.

Further north on a 5,000 cords operation for Brown Co., a local crew averaged four cords per man-day piled along the road; 3.4 cords on a 20-mile haul. Cutting and trucking averaged 2.6 cords, 50% higher than normal. A large percentage of good hardwood and softwood logs were available and ground was good.

Chairman (re-elected) is John Maines, Great Northern Paper Co.; Wilfred McKay, Eastern Corp., vicechm.; Jim Hensel, APA, secy-treas.



Nearly Filled with Chips . . .Lufkin trailer at Angelina Lumber Co. prepares for 6 mile haul to Southland Paper Mills.

Southland Mills in the Chips

Chip delivery from nearby lumber companies features one-man delivery utilizing new type of chip trailer

• About 50% of the daytime requirements at Southland Paper Mills' kraft mill in Lufkin, Tex., are supplied by chips from two nearby lumber mills. Southland produces about 600 tons of newsprint and 200 tons of kraft per day.

Southland's chip handling system is fairly simple. Some 125 units a day are purchased about equally from Angelina County Lumber Co., located in Lufkin six miles from the paper mill, and from Southern Pine Lumber Co. at Diboll, 15 miles from the mill. Chips are purchased five days a week and can total as much as 32,500 units over the year. The chip handling system, operated by one man—the driver of the chip truck—has a capacity of about 25 units an hour and is integrated with the mill's own chip making equipment so that all chips are delivered to a common storage bin.

New Type Trailer Used . .

Both lumber companies use a new type chip trailer designed and built by Lufkin Foundry & Machine Co. The aluminum trailer, which comes as either an open top model for dumping or closed top for blowing chips, has a front end heavy duty lift made of round bar stock made to withstand the tremendous weights when a hoist is used to lift the trailer for dumping purposes.

The trailers also have a rear pivot pipe so designed that when the front end of the trailer is hoisted, the pivot bar lowers to the platform, transmitting all the weight of the trailer and chips through the pivot and protecting tires and running gear from the heavy load

Angelina County Lumber Co. delivers seven loads a day at about 7½ units per load for a daily delivery of about 50 units. One Ford F-7 trucktractor unit is used to haul the chips.

Southern Pine Lumber Co. uses four trailers of slightly larger design hauled by a Chevrolet 9400 truck-tractor. The closed type trailers are loaded from the rear using the blow-pipe

Logs at Nearby Sawmill . . . are cleaned by 30-in. Nicholson debarker, prior to sawing

and chipping.



system. They deliver seven loads a day of nine units.

Angelina's Setup for Chips . .

Realizing the potential in wastewood chipping, Angelina County Lumber Co. spent about \$300,000 installing equipment to make chips. According to Supt. S. C. Sellers, the investment is proving most profitable.

Whole logs are peeled by a 30 in. Nicholson debarker driven by 40 hp Westinghouse motor with two 10 hp motors pulling the conveyor. Waste from the mill is delivered by conveyor to a new shed behind the sawmill which houses chipping equipment. An 88 in. Murray chipper and screen chips waste and delivers it overhead to a Rex travel carriage. An overhead funnel discharge moves back and forth along the length of the trailer distributing chips evenly, by gravity, in the trailer. Friction of the moving belt supplies power for the funnel.

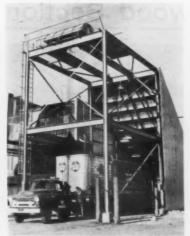
How Chips are Delivered . . . At Southland, chips are first weighed over a 30-ton capacity Winslow truck scale. The driver of the truck handles all unloading operations. The truck is backed against chocks at the edge of the chip hopper. A 15ton overhead Great Northern hoist is then attached to the trailer, which is detached from the truck. Eldridge Ryman, supt. of Southland's wood handling and preparation dept., pointed out that some of the trailers are fitted with doors which are hinged from the top and swing out, doing away with the center post necessary with side swinging doors. He recommends these to prevent chip bridging while chips are being dumped.

A steel chip hopper, 12 ft. deep, 18 ft. long and 15 ft. wide, with sloping sides, accepts the chips. The hopper has sufficient capacity to enable an entire load to be dumped without stopping. Front end of the trailer is raised at six ft. a minute.

A Link-Belt chain conveyor with H-110 chain, 60 ft. long with a speed of 140 ft. a minute, delivers chips up an incline and drops them on a Jeffrey bucket conveyor for delivery to chip storage. The storage conveyor also carries chips from the mill chipping operation. A 5 hp motor with gear reducer provides sufficient power for the hopper conveyor.

Before leaving, the operator pushes a pre-set time switch which empties the conveyor before turning off, leaving it ready for the next truck. A 220 volt vibrator on one side of the hopper prevents arching of chips during unloading. Total cost of hoist, building and conveyors was \$36,000. The trailer is weighed again on leaving. Chips are purchased by weight.

How Chips are Delivered



Truck operator, only man required for unloading operation, attaches Northern hoist and raises trailer himself.



Hoist lifts trailer 6 ft. a minute. Preset switch pushed by driver cuts chip con-veyor off when empty.



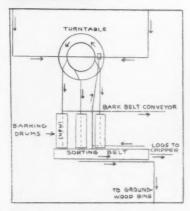
Chips dump in endless stream into 12-ft, deep steel hopper which has ample capacity to handle the entire load of trailer



Chips from hopper and mill chipping equipment are blended in inclined bucket conveyor and deliverd to common silo.

PULP & PAPER

Pulpwood Section



Flow Plan of Log Handling



How Woodyard is Laid Out

Conveyor from woodyard is at center, rear. Turntable tower is at left. Shed houses barking drum discharge and 320 ft. Goodrich sorting apron. In right foreground is conveyor to groundwood mill. Conveyor leading directly from left of sorting shed goes to chippers, screens and chip bin for kraft use.



Woodyard Superintendent . . .

E. B. RYMAN, supt. of wood handling and preparation, says: "The secret of efficient woodyard operation is good maintenance."



Full Sweep of New Turntable Setup

At left, wood truck rolls past turntable at rear. Turntable tower is at left in this picture, barking operator's tower is at right. Horizontal conveyor at rear carries logs from woodyard as does one at extreme left. Inclined conveyor carries logs to one of three drums, at right.

How Southland Modernized Woodyard

New turntable for wood routing is nerve center of system; also tips on maintenance, effectiveness of rubber belts

• Integral part of the recent \$15 million expansion and overhaul at Southland Paper Mills, Inc. is a new system for handling wood as it comes from the woodyard. Heart of this system is a gigantic turntable which acts as a traffic cop for logs between woodyard and the barking drums.

Southland satisfies its 240,000-cord

hunger by rail and truck, some of pulpwood coming from its own forestlands—345,000 acres under companymanagement. In addition, are 125 units a day (about 120 cords) it gets in the form of chips from Angelina County Lumber Co., of which Southland's president, E. L. Kurth, is also top executive, and Southern Pine Lumber Co. The chips satisfy about 50% of the daytime requirements of the kraft mill.

Before this expansion, two Jeffrey conveyors carried logs directly from the big woodyard and delivered them straight into two barking drums. One of these, an 11 ft. x 45 ft. Man towor drum, operated for 16 years before

requiring a new shell and is still giving peak performance. The other drum, added as part of the 1948 expansion, is a 12 x 45 ft. Fibre Making Processes

With the new machine increasing the wood appetite of the mill, it was apparent that the wood handling system would not be adequate to meet the demand. The answer is the new wood routing system designed by Link-Belt engineers working closely with Southland's woodyard supt., Eldridge Ryman and Southland's engineering staff.

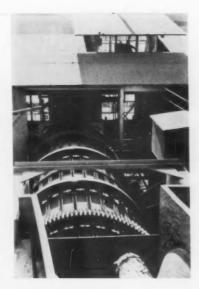
Woodyard "Merry-Go-Round" . . . The turntable has rightfully attracted widespread attention since it has solved a pesky bottleneck in this yard and a similar one might easily serve the same purpose elsewhere. Logs in the yard are dropped by crane two existing Jeffrey conveyors which lead into two new Link-Belt double-strand conveyors for delivery to the turntable, located at the outside perimeter of the yard.

The flat table is 43 ft. in diameter and 8 ft. wide and is designed to handle about 200 cords an hour. It is driven by two 15 hp motors which are 180 degrees apart and electrically interlocked so that if one kicks out, the other will automatically turn off. The two conveyors enter the turntable area from different sides, one of them crossing over the turntable so that they both discharge into a common chute from which they feed onto the table. A 22-ft. tower in the center of the turntable houses controls for the system and the operator has full view of the entire table.

The table has three gates, two of



Rubber Sorting Apron . . Conveyor at right goes to groundwood.



Control Tower . . .

Conveyors to barking drums are controlled from this tower atop sorting shed. Operator can start and stop conveyors to each of the drums. Note log about to dump into chute to barker in foreground.

which are hydraulically operated and the third stationary. By operating the two gates, the tower man can shove logs from the moving table into either of two chutes or let them ride out the trip and drop off at the end into a third. Each of the chutes discharges on a single strand Link-Belt conveyor leading to barking drums (a third, a Fibre Making unit, has been added).

Use Rubber Belts . .

From the barkers, peeled logs drop onto a rubber apron supported by 120 rubber tires, 3½ in. by 12 in. The original rubber apron provided by Goodrich was "first rate," according to Mr. Ryman. It lasted more than seven years. The sorting apron and belt is 320 ft. long and six ft. wide and is 72 in. Goodrich 50 long life with a ¼ in. top and ¼ in. bottom cover. At the point where logs are plowed off the apron, the belt is heavy duty, 36 in, wide.

We just told Goodrich what we wanted and they came up with this belt," Mr. Ryman said. "It's doing a good job for us.'

Best grades of peeled wood are poled from the sorting apron by hand and dropped on a conveyor which delivers them to a singlestrand conveyor for the lift to the roof of the mill. Here they fall on a rubber conveyor which runs through a travel carriage. Peeled top grade logs are thus delivered to one of six bins in the groundwood mill.

Lesser grades of wood go by conveyor to the existing 991/2 in. Murray chipper which is equipped with a new Murray type 23 in. chipper spout with a hinged cover. Two existing Rotex screens filter chips before they are delivered to the chip storage bin by Jeffrey bucket type conveyors. No new equipment was necessary for chip handling.

Some Maintenance Secrets

You can't run a woodyard 24 hours a day without maintenance," Eldridge Ryman told PULP & PAPER, "it's just too rugged. We learned that a long time ago. We have two shifts a day here and the shift time between is used for overhaul and repairs. We've saved money in the long run with this system. Our mill has never been shut down because of woodyard

Mr. Ryman also spoke highly of the rubber apron. "At first we were leery of plowing logs off a belt, now we're sold on it. Rubber is lighter and easier to handle and better to maintain than the old type steel aprons. It holds up well, too. We're all for it."

Then he gave one final operational

When you're plowing logs off a belt, the secret is speed. Use plenty of speed so that when that plow hits the logs, they shoot right off. You'll never get in trouble with jamming and your belt will last longer.

Study Cost Sharing

Battelle Memorial Institute, Columbus, O., has contracted with the U.S. Forest Service to make a study of ways the federal government, states, and private landowners can share cost of protecting non-federal lands from forest fires.

The study will determine the dollar value of non-federal forest and watershed lands which should be protected. It will include the degree of protection needed, fire protection now given, and the extent to which the public agencies and private owners should share in the cost.

Battelle will add three foresters to its staff: J. H. Price, former regional forester, North Central Region; George L. Drake, former vice president, Simpson Logging Co.; and Arthur S. Hopkins, executive secretary, Northeastern Forest Fire Protection Compact.

Special advisors include Stanley G. Fontana, Univ. of Michigan; W. F. McCulloch, Oregon State College; L. J. Freedman, Penobscot Chemical Fibre Co.; J. E. McCaffrey, International Paper Co.; C. G. McLaren, National Container Corp.; John L. Aram, Weverhaeuser Timber Co.; Charles L. Wheeler, Pope and Talbot, Inc., and Ernest F. Swift, National Wildlife Federation.

Pulpwood Section



Unusual in West—Gigantic Storage on Land

Water storage is the general rule. This Weyerhaeuser yard can store 15 million feet—about 6 or 7 weeks' supply for Cosmopolis mill. Cold decking, truck unloading and feeding woodroom is job of R. G. LeTourneau electric wheel log stacker.

FOR WEYERHAEUSER'S NEW COSMOPOLIS MILL-

400,000 bd. ft. of Pulpwood Per Day

· A proud name in Pacific Northwest and American forestry-"Clemons"has taken on a new meaning. Standing side by side with the new Grays Harbor Pulp Division is another new autonomous company division called the "Clemons Operation."

The name "Clemons" was first applied to the Weyerhaeuser-owned Clemons Tree Farm, the nation's initial tract to be certified under the AFPI-sponsored American Tree Farm System, back in 1941. For 15 years, this tree farm was managed almost purely on a forestry basis. Timber was largely young-growth on sites logged over for the previous 40 years. The transition period found Weyerhaeuser building access truck roads, fire breaks. communication facilities, planting seedlings, falling snags, etc.,

Upon completion of the new 400 ton market pulp mill at Cosmopolis (described in July issue of PULP & PAPER), the Clemons Tree Farm was taken out of its former status. Its acreage was pooled with that of other

- A big and diversified woods operation is created
- Extra trailer to truck speeds up small log output
- Salvage material is netting about 14 cords per acre
- Weight per cord is calculated by sampling method
- Seeding of scarified tracks done by helicopters
- Woodroom uses two types of hydraulic barkers
- New place for chip screens—on top of chip silos

WTCo tree farms in the Wynooche Valley and the Willapa Harbor district in the "Clemons Operation."

William I. Johnson is manager. He has spent a lifetime in the area.

Clemons Operation includes some 350,000 acres, plus lands on which Weyerhaeuser has only timber rights. The Operation handles tree farms, logging, land management, booming, rafting and sorting.

Several hundred thousand bd. ft. a day is logged, and normally there are 600 men in the woods to do it-500

in the logging crew alone. This production is funneled to the pulp mill and two sawmills. Daily requirements of the 400-ton pulp mill alone approximates 400,000 board feet.

Sorting in The Woods . . . In felling the trees, the men work two to a set-faller and bucker. As a safety factor, the men work as a team. Both stay at the base of the tree until it is down. Then the faller swamps out for the bucker and measures the logs. They use McCulloch 73 power saws equipped with 32-in. bars and Oregon chains. Thirty-six sets of fallers and buckers are needed.

All sorting is done in the woods this way: 1. Better hemlock; 2. Small and rough hemlock; 3. Douglas fir; 4. Cedar; 5. Spruce—large and better; 6. Spruce—small and rough. Logs also are bundled on the truck and dumped in water this way. Bundles are lowered into water with the same straps, which are reused after removal.

All cedar, Douglas fir and big, clear spruce logs go to the Willapa sawmill at Raymond. The Aberdeen sawmill uses the better hemlock. The pulp mill gets small, rough spruce and small, limby hemlock.

Logging trucks operate a regular shuttle service and travel loaded both ways. If a truck brings pulp logs to Cosmopolis from south of Raymond, a load of sawlogs of cedar, fir, or spruce will be taken back to the Raymond mill.

Relogging Is Practiced . . .

All material is logged in one operation except for short, broken tops and 4 to 9 in. diameter logs, which are recovered during re-logging. For hauling, the company employs 18 Mack B71 trucks with Fruehauf trailers. The longer small logs are bucked to 20-ft. lengths; actually, most of it is shorter to start with.

Loading must be fast to be economical. Sometimes it takes up to an hour to load small material. There may be as many as 60 pieces on a truck and 60 on the trailer.

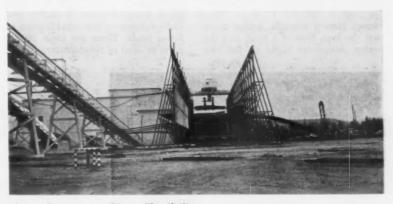
To speed up operations two trailers are being tried for each short-log truck. This permits loading the extra trailer while the truck and the other trailer are making the run to the pulp mill. On arrival at the setting, the empty truck, carrying the empty



Logs . . . and Problems . . . BILL JOHNSON (left), manager of Clemons Operation, which supplies logs to Weyerhaeuser mills, explains logging problem to Mill Manager JOE BROWN.



A Typical Setting
Yarder is Ledgerwood hoist with a Cummins 200 hp motor. Truck is a Mack B71, with Fruehauf trailer. Salvage log in foreground is typical of old cedar found on ground.



Huge Craneway Gives Flexibility

Berger crane on Isaacson Iron ways can unload trucks, rail cars and live log deck as well as pick up direct from water storage.

trailer, backs up to the full trailer and pulls it out to a convenient bypass. The truck is then backed to the loader which sets the empty trailer aside and loads the truck. The loaded truck picks up the loaded trailer on the way out. About 16 short truck and trailer units per day are hauled in.

The pulpwood, for most part, is loaded by ½ and ¾-yd. machines. For the bigger logs, the company has several Koehring 405 loaders, and one rubber-mounted Osgood 1¾-yd. loader, and 2-yd. ¾ Limas.

Yarding is mostly done by high lead with some tractor logging. Two 60-ft. portable spars were made at the company's shops. Yarding crews on relog settings are usually five men—one hooker, one choker setter, whistle punk, chaser and yarder operator.

The salvage and relogging efforts make the whole operation doubly important. Salvage material nets about 14 cords per acre on the Clemons Operation. It is estimated there will be 15 to 20 loads of pulp material per day to be hauled to the Cosmopolis mill. The ground is left in better shape and fire hazard is reduced.

All the trucks are equipped with Williams air scales. These scales have twin dials, one for the truck and one for the trailer weight. Simple addition of the two readings gives gross weight of the overall load. It is felt these scales soon pay for themselves, eliminating overloading trucks on public roads.

At the Dump . . .

All pulpwood (WTCo and outside purchase wood) is measured on a net cubic content or in cords by a sampling method to arrive at a weight factor for such logs. This is done on a full length (50-ft.) scale. Weyerhaeuser will buy all available outside wood possible.

After weighing, pulp logs are strapped into truck-load bundles. Two bands of 1%-in. Signode steel strapping are used. This is not necessary for unloading, because that is done with a LeTourneau log stacker with overreaching arms; it is done because the logs are stored at present in a large cold deck, with a maximum capacity of 15 million ft. They are stored on

land because of the small size and

sinking characteristics of hemlock.

All scaling is by the Grays Harbor Log Scaling Bureau and done both on the Scribner Scale and for cubic foot content. Any piece that measures 50 bd. ft. or more is measured on Scribner, but is still bought on cubic foot content. Since loads are first weighed, it is possible to do a test scale to measure the weight factor. Bundles run 3 to 10 cords. The number of cords are obtained from the cubic foot content. By dividing the weight by the number of cords, an average weight per cord is obtained. Once this average is established for material from a certain setting, it may be used rather accurately, with rechecks.

About 60 trucks are used on the Clemons operation and each truck makes two to six hauls a day. Some go directly to the Chehalis River dump. Here a one-man bridge crane sets the logs, load at a time, into the water. Automatic hooks on the two

lines release as the water takes the weight.

Hemlock and spruce chips are trucked 24 miles from the Willapa sawmill, where a 66-in. Norman chipper chips slabs and edgings. Individual truck capacity is 10 air dry tons and 15 truck loads are brought over each day. All logs are barked by a Sumner Bellingham hydraulic barker at Raymond and fir and cedar chips go to WTCo.'s Everett Kraft mill by rail. At the Aberdeen sawmill a 50-in. Nicholson mechanical barker and a 66-in. Norman chipper will be used. These chips (all hemlock) also will be trucked to Cosmopolis.

Emphasis on Land "Re-hab" . . .

The forestry program for the Clemons Operation, according to Bob Ramstead, branch forester, is placing special emphasis on the rehabilitation of forest lands. There are some 60,000 acres in need of rehabilitation. Wide-

spread tractor scarification as well as spraying methods are used, particularly on alder. Last year 3,000 acres were scarified, and seeded by helicopters—an acre every four minutes. Thinning programs are to become increasingly important.

Hemlock, white fir, and spruce make up 73% of the species. The remainder runs 15% cedar and 12% Douglas fir.

The Wood Room . .

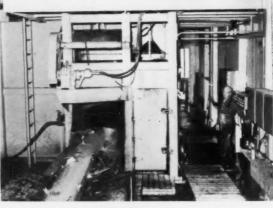
Logs are fed into the Cosmopolis mill's woodroom via a large craneway by a Berger Engineering bridge crane. It can pick up wood directly from trucks (a load at a time), from the river or from a live log deck stocked from the mill yard. Logs are separated, according to diameter, and sent to either of two hydraulic barkers.

Normal pressure for the barkers is 1300 psi. Water is supplied by two Ingersoll-Rand pumps powered by



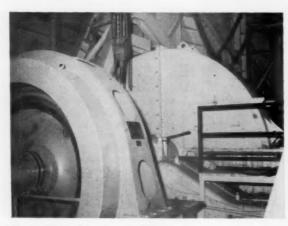
Wide Open Lens Catches Action

Sumner Bellingham hydraulic barker nozzle as it starts its run on pulp log. This barker takes any diameter log up to 6 ft, and up to 42 ft, long.



Cleanly Barked Logs Emerges

Hansel 30 in. ring barker has done its job. Log starts into chipper. This is for logs under 25 in.



One of World's Largest Chippers

This Summer Iron Works 175 in. 6-knife machine is powered by 1750 hp G.E. direct-connected motor. Has chipped 3400 logs (equivalent to approx. 1500 tons) in one shift.

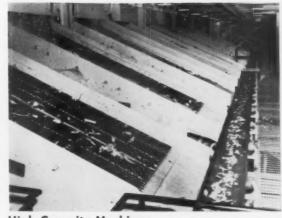


Down She Goes

Into huge 175 in. Sumner chipper goes this log, which will be chipped into thousands of tiny chips in a matter of seconds.



Eight Cooks Apiece is CapacitySix chip silos will hold about 4300 tons of chips. One man is responsible for screening, rechipping, rescreening and feeding chips to silos.



High Capacity MachinesThese double deck Link-Belt CA-2614 chip screens, 6 ft. wide x 14 ft. long are in unusual place—top of silos. Each screen has a rotary vane feeder.

G.E. steam turbine drives.

The smaller barker is a Hansel ring barker which accepts logs averaging 10 in. and up to 28 in. diameter. Logs are first cut off at 24 ft. with a Sumner Iron Works 84 in. cut-off saw. Barked logs are conveyed in straight line into a Carthage 110 in. chipper.

A Sumner-Bellingham-type hydraulic barker takes big logs up to 42 ft. long and averaging 24 in. diameter. Next, a Sumner 108 in. circular cut-off saw cuts them to length for a straightline trip into the Sumner 6-knife 175 in. chipper, one of the largest in the world. Old-growth logs above 40 in. diameter are cut into short lengths and routed to a Salem steam splitter, which reduces them for the 175 in.

chipper. In a shift, only a dozen or so oversize logs need to be split.

Chips from WTCo sawmills at Raymond and Aberdeen fill about 10% of the pulp mill needs. Approximately 10% of the logs will be purchased from independent loggers and farmers.

Practice in the woodroom calls for two daily shifts on the smaller Hansel barker and one shift on the big log barker. Layout provides for interchange of logs from one barkerchipper side to the other, in case one is out of order.

Chips dump into a surge bin, then by means of multiple chains to the conveyor leading to storage silos. Link-Belt supplied the conveying equipment as well as the chip screens. Western Gear Corp. drives are used, also Esco manganese chain along with Sumner and Lamb-Grays Harbor chain and Sumner deck equipment.

Chip screens and silo department are manned by a single operator. Each of the six silos, measuring 80 ft. in height and 44 ft. in diameter, will hold enough chips for eight separate 90-ton cooks, or 720 tons in all.

The chip screens are placed atop the chip storage silos. This combines the jobs of screen tender and tripper operator for distribution to storage, and eliminates the need for a separate foundation for screen room. Fiber recovery is effected through use of seven heavy-duty Link-Belt screens, Sumner re-chipper and two Tyler pin screens.

Ward C. Williams, who prepared this article, goes over exclusively to the staffs of *The Lumberman* and *The Timberman*, which, like PULP & PAPER, are Miller Freeman publications. His territory is taken over for P&P by Louis H. Blackerby, of Portland, Ore., who now gives full attention to the pulp and paper industry throughout the Pacific Northwest area.

Forest Fires Hit Record Low During 1956

U.S.A. forest fires hit a record low in 1956, although the American people visited and used forest lands more than ever before, the U.S. Department of Agriculture reports.

A total of 143,485 fires were reported on private, state, and federal lands—a reduction of 1,695 from the 1955 figure. Despite this favorable showing, a forest fire was reported an average of every 3½ minutes during 1956. Man-caused fires dropped 5%.

Improved equipment and better methods reduced the area burned by 1,462,707 acres, down to 6,605,894 acres in 1956.

The South came in for special praise for considerable improvement in its forest fire protection. In 11 States, North Carolina to Texas, the number of fires were reduced by 6,372 from the 1955 total of 109,082. Acreage burned also dropped sharply, from 6,781,536 in 1955 to 5,290,217 acres in 1956—a reduction of 1,491,-319 acres.

"Unfortunately, a lot of people are still deliberately setting forest fires," Forest Service officials say. "Incendiarists, found largely in the South, still top the list of fire causes on protected lands. (Figures are not available on unprotected land.) There were 1,758 fewer fires set deliberately in 1956, a reduction from 25,773 in 1955 to 24,015.

"Power in Action"

Copies of the new profusely illustrated booklet "Power in Action", by International Harvester Co.'s Construction Equipment Division, may be procured by readers through local IH Construction Equipment distributor.



Re-use Wire Rope

Worker unties wire rope from bundle of logs just picked up from water storage by Berger crane. Wire rope is re-used and sent back to log dump.

PULP & PAPER

Pulpwood Section

44,000,000 Acres For the Birds, Etc.

That's what would happen if Senate Bill 1176 is passed or any like it, says the American Pulpwood Assn. Appealing strictly to the emotions and favoring a very minute group (less than 1%) of those who use the nation's forests for recreation, this bill would establish a national wilderness preservation system that would lock up immediately an estimated 54 million acres, according to Harry S. Mosebrook, forester for American Pulpwood Assn., who presented the industry viewpoint to a Senate subcommittee on public lands. Such a system is not necessary, he contended, and would blanket into a wilderness preservation system, perpetually for all practical purposes, against roads and all other commercial uses, almost all of the national parks, many national monuments, the primitive, wilderness, wild and roadless areas within the national forests, many wildlife and game refuges, and some Indian reservation wilderness areas. It would eliminate multiple-use management of public lands, he said. All commercial use of wilderness areas would eventually be eliminated without regard for people and communities dependent upon proper utilization of the resources, he added.

Land Buying Law Opposed

A bill to permit the federal government to purchase extra lands for recreational facilities as part of its water conservation program also was opposed by Peter Dierks Joers, Hot Springs, Ark., timberman and vice pres. and director of Dierks Forests, Inc., who told a House subcommittee the proposed changes would threaten jobs, payrolls and taxes in communities where timber is a major industry. He said his company was compelled to sell 10,000 acres of timberland to the government for two dams in Arkansas and faces loss of another 50,000 acres in a dam project at Milwood.

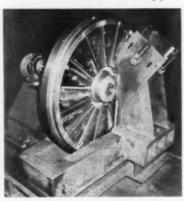
Three Projects Underway At Battelle Institute

Three research projects supported by a group of pulp and paper companies are under way at Battelle Memorial Institute, Columbus, O., which are of varying interest to pulp and paper companies and producers of pulpwood. A mechanical slab debarker being tested at Battelle is said to be a good possibility by some paper mill engineers who have information on it.

A somewhat general research project on chipping methods is also under

The third project, as reported previously in PULP & PAPER, is a new flotation process for separating bark from wood, which means chippers for the whole tree could be used in the woods, with separation plants at mill sites. A "horseback" opinion of some industry observers, however, says the big Southern mills would need tremendous vats of uneconomic size to do the job.

16-Knife Waste Wood Chipper



This chipper was designed to meet increasing demand for a chipper to produce wastewood chips of the highest possible uniformity. considerable experimenting with different cutting angles, knife angles, and spout designs, Sumner offers this combination of proper knife angle and helicoidal wearing surface between each knife to insure an uninterrupted feed of the material being chipped. This continuous feeding eliminates, to a very high degree, the production of "fines" and "overs." Material hugs the anvils and bears against the helicoidal disc wearing surfaces all during the chipping process, thus producing highly uniform chips.

The main chipper frame and integral cast motor base are designed of heavy rugged sections. Chippers are in the 53 in. and 66 in. right hand disc sizes, with several sizes of infeed spouts. The picture shows front face of the chipper disc, with housing removed, to show the helicoidal wear plates between each knife.

Sumner is represented in the South

by Wilco Machine Tool Co., Memphis, Tenn.

New Features of Skidder



Two-speed auxiliary transmission. power steering, and full torque driven winch have been incorporated as new, standard features of the FWD Blue Ox rubber-tired skidder manufactured by Four Wheel Drive Auto Co. for skidding timber and pulpwood in woods operations. G. F. DeCoursin, FWD vice president-sales, also announced that the Blue Ox Skidder now is available with PMC 3-71, Cummins J6-B, or Perkins P6V or R6 Mark II water-cooled diesel or Deutz FL4-514 air-cooled diesel engine. Standard powerplant is the RD-240, 131-horsepower gas engine. Two-speed auxiliary transmission and power steering give the FWD Blue Ox even greater slow-speed maneuverability than the Clintonville (Wis.) firm's original BX Skidder. The new friction clutch logging type winch, Carco Model A-3, is flange connected to the rear of the transfer assembly, providing a wide range of ratios and winch line speeds through the various transmission and auxiliary gears.

Two New Chain Saws



New Models 6-22 (left) and EZ-6 (right) are announced by Homelite, Port Chester, N. Y. Called the Homelite "Power Twins," both new chain saws have a 6 hp engine—the EZ-6 is a direct-drive, 19 lb. unit; the 6-22 is a gear-drive, 22 lb. unit.

According to the manufacturer, "the EZ-6 is the fastest, lightest, most powerful, direct-drive chain saw in the world. With its 6 hp, the EZ-6 will cut through 8-in. oak in 4 sec., 18-in. pine in 12 sec. and bring down trees up to 5 ft. in diameter. Its light 19 lbs. are perfectly balanced—easy to handle on any job."





Proud of Father's Genius, Brothers Carry On . . .

ED DROTT, JR., 36-year-old president, in picture at left, explains versatile unit which bowled over trees, cleared brush and built stretch of hilly road in minutes. LOUIS MAJOR, Drott service mgr., is driving International tractor. In picture at right, Executive Vice Pres. JOHN DROTT, 34, explains father's early inventions, now preserved in an "outdoor museum" at proving ground.

Mechanization Has Gone Long Way ...

... in 40 years since father of young men above put first tractor in woods. Now it has 130 attachments!

. . but the late Ed Drott, Sr., who passed away just a year ago, really got started in building and engineering labor-saving logging equipment in 1944, during a war, when there was a manpower shortage.

Rising wood cost is today's impelling reason for mechanized pulpwood logging. Wood and wood delivery constitute a major item of cost for pulp producers, up to 40% in some mills

The elder Drott was a Wisconsin woodsman and logger himself. He got the idea for his skid-grapple by observing the way he piled a load of firewood on one arm, clamped down on it with the other, then brought it close to his body for balance, and dumped it by letting go with the top

A PULP & PAPER editor flew up to the Drott North Woods proving ground between Tomahawk Rhinelander, Wis., to see what other useful woods gadgets and contraptions have been developed by Drott enterprise since the skid-grapple first appeared in 1944, Appropriately, the trip "in" was made in Drott's company plane, and the flight "out" on one of the International Harvester's, whose crawler tractors have become big producers with Drott attachments.

There isn't room here to list the 130 working attachments of all sorts and sizes. And after seeing an amazing variety of versatile tools demonstrated, a layman editor isn't going to dispute the claim.

The now long-tried and proved skid-grapple came in for most attention. It is now available in 33 different models for International TD-6s, TD-9s, TD-14s and TD-18s, as well as for the rubber-tired and speedy new Frank G. Hough Co. Payloggers.

The Easy Way . . . Apparently, Ed Drott, Sr., the Wisconsin woodsman, believed in doing things the easy, natural way. For him. this was to make his new equipment first-then to make the engineering drawings. Out at his lakeside retreat near Rhinelander, he developed the "Hydro-Spring," pry-action breakout, the 4-in-1 (see picture), skid-shoe transportation, and many other ingenious woods tools. The present head of the company, Ed, Jr., is a trained en-

With that "Hydro-Spring," a hydraulic cylinder enclosed in a locomotive-type coil spring, your ride up on one of those TD's or Hough Payloggers is smooth, and that is sure to mean a lot to a workman at day's



So, They Called It a Land Clearing Special

a Land Clearing Special
FRED NEILSON (left), in charge of all
forest products applications for International Harvester crawler tractors, with
DICK WAND, Jacksonville, Fla., lumber
journal editor, and WALLY KORTH
(right), pulpwood development specialist
for International. This high capacity
Drott tool differs from standard grubber
blades, in that hydraulic cylinders are
used and skid shoe extends clear across
underside of blade. Bootjack, at middle
of blade, prevents initial slippage or
"riding up tree."



Long Stretch for Piling High . . .

International TD 9 quickly loaded this truck near Rhinelander, Wis., with Drott Skid-Grapple. Latter's grab-arm and skid-shoes and hydraulic controls make for speed, even cling to a couple 4 ft. sticks with one top arm. Can release one or two logs at a time, or all at once.

end, saved from all the rough jolting of logging work. The cylinder is linked to the main lift cylinders and shock forces, tending to displace oil from the main lift cylinders, are channelled into the Hydro-Spring, extending it and compressing the big spring, to cushion impact loads. It also eliminates many hydraulic hose failures.

The elder Drott applied the age-old fulcrum and pry-bar principle in developing his pry-action breakout. Tremendous prying force is exerted by hydraulically using the big skid shoes on the ground as the fulcrum point, placing the shock load into the ground and not on tractor or loader.

New Gadgets . .

One of newest Drott attachments



A Multiple Duty Material Mover . . .

That's Drott's 4-in-1, shown here in bulldozer position. Mounted on frame of Drott Skid-Shovel, it is a 2-segment bucket, which can be hydraulically positioned four ways from tractor seat, while it is moving. It also serves as a bullclam shovel, as a big-capacity skid shovel and as a many-purpose clamshell . . . it excavates, loads, bulldozes, grades, strips, spreads and compacts. . . .



Speedy, High Riding Rubber-Tired Unit . . .

Frank G. Hough Co.'s new "Paylogger" line 4-wheel drive units in three sizes, using a number of different types of Drott Skid-Grapples. For various pulpwood lengths, it has 28, 36 and 60 in. prong facing. They may travel on restricted highways, move fast from one logging show to another.

is the "low profile" skid grapple, used for the first time on Hough Payloaders for long logs. It is recognition of a trend to full-length logging, especially in the Northeast and other sections. Another new attachment is called "The Big Ed," a combination grapple which can be adjusted to either handle a large log or a stack of lumber, lifting either to high positions, as desired.

One is inclined to wonder, after viewing a demonstration such as the one at the Drott camp, why some of these gadgets and ideas for mechanized logging, the scissor-like action of the skid-grapple, the long-log attachments, the skid-shoe, etc., and similar developments of other manufacturers of logging equipment, weren't discov-

ered long before they were. Apparently, it is the age-old story of an economic need bringing about progress, in the woods, as in the mill.

Pulpwood Personals

ARCHIE M. BYERS, former supt. of logging operations for Alaska Pine & Cellulose Co. at Port McNeil, Vancouver Island, has been named woods manager by Alaska Lumber & Pulp Co. and will be responsible for pulpwood procurement for the new pulp mill being built near Sitka, Alaska, by U. S. and Japanese interests. Mr. Byers had been with Alaska Pine and its predecessor B.C. Pulp & Paper Mills for eight years. He is succeeded at Port McNeil by ARCHIE HALLBERG, foreman of the company's operations on Moresby Island, one of the Queen Charlotte group. . . .

FRED D. MULHOLLAND, for many years chief forester for Canadian Western Lumber Co. and Crown Zellerbach Canada, died at Victoria, B.C., aged 69. One of the best known members of the forestry profession in the Pacific Northwest, Mr. Mulholland's book on B.C.'s forest resources, published in 1937, is regarded as a classic in the industry. . . .

K. W. LINSTEDT, regional fire control chief of US Forest Service, Portland, Ore., becomes chief of soils and watershed management division recently established to co-ordinate the increasing multiple use of forests according to Regional Forester H. J. STONE. A. E. SPAULDING, in charge of Region 1 fire control at Missoula, becomes chief of fire control in Region 6 at Portland. . . .

JERALD C. LUMPKIN, forestry graduate of Austin State College in Texas, and a member of Southland Paper Co. wood procurement department since 1953, has been named asst, chief of wood procurement. . . . M. C. GIBSON, of the Cape Fear Wood Corp., Elizabethtown, N.C., has been named 1957 chairman of North Carolina Forest Industries Committee. . . . SAM HUGHES is now asst. area forester for Riegel Woodlands Corp. at Bolton, N.C. He replaces K. M. COR-BETT who recently transferred to the New Bern district. .

DR. ALLYN M. HERRICK is new dean of George Foster Peabody School of Forestry at U. of Georgia. Dr. Herrick is a native of Syracuse, N.Y., and was professor of forestry at Purdue. He has degrees from New York State U. College of Forestry and U. of Michigan. FOLKE BECKER, pres., Trees for Tomorrow Inc., Merrill, Wis., told members at recent annual meeting that "expanded forestry research facilities for entomology, pathology and silviculture are as urgently needed today as intensified forest protection was 25 years ago." Since its founding in 1944, Trees for Tomorrow has distributed and machineplanted 13,644,000 trees. .

H. V. HART, St. Regis Paper Co., Deferiet, N.Y., is 1957 chairman of the New York Forest Industries committee, sponsors of the industry-operated Tree Farms. Others serving on the committee include LYMAN A. BEEMAN, Finch, Pruyn and Co., Inc., Glens Falls; S. W. HAMILTON, West Virginia Pulp and Paper Co., Mechanicville; E. S. NUS-PLIGER, The J. P. Lewis Co., Beaver Falls; G. A. PESEZ, International Paper Co., Glens Falls; A. M. ROSS, Newton Falls Paper Mill, Inc., Newton Falls; and ROBERT E. YOUSE, Columbia Box Board Mills, Inc., Chatham.





New Officers Named

New Officers Named
GEORGE J. PECARO (left) was elected exec. vice pres. of The Flintkote Co., announces I. J. HARVEY, JR., chairman, succeeding PERCE C. ROWE who recently became president. Mr. Pecaro graduated from Iowa State College in 1930 and joined Flintkote in 1939.

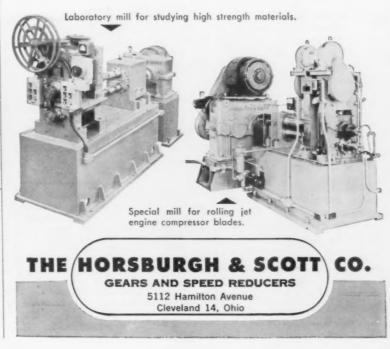
J. D. PATTERSON (right) was appointed vice pres. and gen. traffic mgr. of Union Bag-Camp Paper Corp. He joined Union Bag in 1939 and has been gen. traffic mgr. since 1940. He has been gen. chairman of Southern Paper Mfrs. Traffic Conference since it began in 1941.



Manufacturers of precision metal forming equipment, the Fenn people necessarily must buy carefully when selecting components from other sources. When it comes to speed reducers and worm and gear sets, they rely on Horsburgh & Scott.

The Fenn rolling mills illustrated here are built to order for both production and laboratory use. H & S Speed Reducers are in evidence, sized to suit the need. H & S worm and gear sets are used in the screw down mechanisms.

The rugged dependability of H&S products, helpful and flexible engineering service, and reliable delivery performance are principal values in a continuing profitable relationship . . . There's a solution to your power transmission problem in the broad lines of gears and assembled units made by H & S. Write us, or contact your nearby H & S representative.



Institute Awards

Certificates were issued to 25 students who completed a recent fiber microscopy course at the Institute of Paper Chemistry under the direction of DR. I. H. ISENBERG. They were: JAMES BAM-BACHT, The Institute, THOMAS R. BARTHELL, M&O Paper Co., HARRY BRAUN, Bergstrom Paper; WILLIAM A. DRYER, The Kansas City Star Co.; WIL-LIAM S. GORMAN, National Gypsum; ROBERT GUIDE, The Institute; P. C. HAMBAUGH, Bowaters Southern; RICHARD HEIL, The Sorg Paper Co.; PROVINCE HENRY, National Bureau of Standards; H. G. HURLBURT, Howard Paper Mills: ARVO KAUTOLA. Marathon Corp.; MRS. CARL LORENZ, Fox River Paper Corp.; J. McINNIS, Hudson Pulp & Paper; WILLIAM NOELL, Albemarle Paper Mfg.; ROB-ERT PHELAN, Kimberly-Clark; FRANK SCHNABL, The Institute; JOHN SCHULZ, The Institute; ROGER H. ROBINSON, Cornell Paperboard Products; LLOYD SHAKLEY, John A. Manning Paper Co.; JOHN F. SLATON, Union Bag-Camp; JOHN SMART, Consolidated Water Power & Paper; PHILIP J. SWARTZBAUGH, P. H. Glatfelter Co.; DAVID TARAZI, Southland Paper Mills; HERBERT WILBURN, Eastman Kodak; DAVID WILLIAMS, Champion Paper and Fibre.

Familiar Faces . . .

. . At Institute of Paper Chemistry: JEANNE WHITE, who has presided over switchboard and reception desk since 1947; GEORGE GRAHAM, administrative co-ordinator, personnel manager, logistics officer, who joined the staff in 1948; HELEN HILL, secretary to President John Strange. She came to the Institute in 1953 as a secretary and assistant to the dean of admissions; and WENDALL SMITH, secretary, a relatively new addition, who joined the staff in 1955. He handles legal, procedural and clerical matters for the board, as well as day-to-day administration of the institute. . .



Panellit Appoints Three

(L to r): MILLARD D. SHRIVER, formerly v.p. i/c sales, is appointed to the new position of v.p., asst. to president, at Panellit, Inc., Skokie, Ill., according to Pres. A. F. Sperry. Mr. Shriver joined Panellit in 1951.

WILLIAM B. DENNISTON is named sales mgr. for Panellit. Mr. Denniston has held sales management positions with Illinois Tool Works and MacLean-Fogg Lock Nut Co., and operated his own farm supply business. JOHN R. WARREN is new gen. supt., contracting div., Panellit Service Corp. He will supervise all instrument installations. Formerly with DuPont, he has been with Panellit two years. (L to r): MILLARD D. SHRIVER, for-

been with Panellit two years.

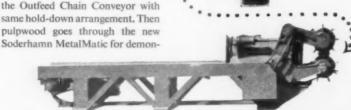


Award for PULP & PAPER

PULP & PAPER was one of only 33 magazines in a field of over 2,000 specialized and business magazines to receive the 1956 National Safety Council's Publice Interest Award "for exceptional service to safety." Here, in Chicago, ROBERT CURRIE (left) representing the Council, presents the plaque to ALBERT W. WILSON, editor of PULP & PAPER.



Here's the barking line that is exciting keen interest in the field today. See how the Pocket Chain Pulpwood Feeder delivers to the Soderhamn Infeed Chain Conveyor with hold-down arrangement for 4' and 5' 3" pulpwood, through the fast 21" Cambio Barker, and onto the Outfeed Chain Conveyor with same hold-down arrangement. Then pulpwood goes through the new



stration of its sensitive metal detecting, dye-marking and warning signal operation.

Ask for this demonstration film for showing in your own office. Can be shown on any 16 mm, projector.

Make Soderhamn your headquarters for Woodwaste Utilization Equipment

BARKERS • SLAB BARKERS & CHIPPERS CHIP SCREENS • GANG SAWS CONVEYORS • LOG FLIPPERS AND MANY OTHER MACHINES

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WIN A FREE HOMELITE Chain Saw EVERY YEAR FOR LIFE!

Register Now in the big New Homelite "Power Twins" Contests!

You may have three chances to win! Grand Prize — a free Homelite chain saw every year for life, PLUS 25 chain saws being given free by Homelite District Offices, PLUS hundreds of chain saws being awarded by Homelite dealers in their own local contests!

Nothing to buy, nothing to write, no obligation! Just have a free demonstration of the new Homelite 6-horsepower Power Twins at your nearest Homelite dealer. Fill out the entry blank and you're automatically registered for all the awards. Do it today! Limited to United States residents. Subject to local, state, county and city laws.

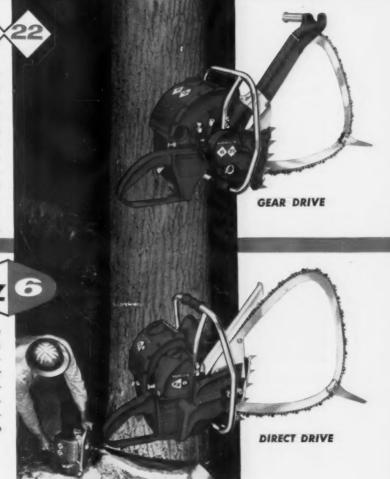


6 Horsepower 22 Pounds

You get top pulpwood production with the new Homelite 6-22 plunge-cut bow saw. Its 6 full horsepower packed into only 22 pounds gives you the lugging power to slice through 20" pine in 18 seconds. Easy to carry, easy to handle, the 6-22 bow speeds up all your felling and bucking operations. You get more profitable cutting because the famous Homelite short-stroke, high-compression engine stands up under the grind day in and day out with less maintenance, less down-time. The pinch-proof, non-binding bow converts quickly to straight blade, brush-cutter or clearing bar.

6 Horsepower 19 Pounds

Fastest-cutting direct drive bow saw made, the new Homelite EZ-6 plunge cuts 8" oak in 4 seconds, 18" pine in 14 seconds. The EZ-6 combines famous Floating Power... 6 full horsepower... perfect balance... lightest weight of any direct drive saw for all cutting, whether felling, limbing, topping or bucking. Cuts in any position. Converts easily to straight blade for cutting timber up to 5 feet in diameter.



HOMELITE A DIVISION OF TEXTRON INC

7708 RIVERDALE AVE., PORT CHESTER, NEW YORK
Manufacturers of carryable pumps, generators, chain saws, blowers

Homelite builds and sells more chain saws than any other company in the world.



Strictly Personal

Southern Sidelights

The Southern Exposure: T. C. BAN-NISTER, JR., mgr. of the new Bowaters' pulp mill at Catawba, S. C., has been in Sweden and England studying equipment. JOE MAILHOS, formerly with Owens-Illinois' National Container Div. at Valdosta and Jax, will be plant eng. at the Catawba mill. Bowater opened office at 1330 Peachtree St., Atlanta, Ga., citing as the reason, "the rapid expansion of newsprint facilities at Calhoun, Tenn." GEOFFREY B. HUTCHINGS, J. WILLIAM PRICE and JOSEPH A. LOGAN will serve there under Mgr. RALPH E. WATT. All came from New York office except Mr. Logan, who was in Calhoun.

MARTIN TALLEY, formerly at Georgetown, is now supt. of machines No. 5 and 6 at I.P.'s Mobile mill . . . KERMIT GARDNER, onetime res. mgr. of I.P.'s Atlanta plant, Single Service Div., has been named Southeastern dist. mgr. for the entire div. WYNDHAM WHITE, JR. takes over as Southern regional mgr. of I.P.'s fine paper and bleached board division, offices at 134 Peachtree St., Atlanta,

HOMER (Slick) LUSBY, alumnus of St. Regis' Jax mill and also Great Northern, is now special asst. to the supt. of Paper and Board mfg. at Champion Paper & Fibre Co., Canton, N. C., mill . JOHN SKIPPER, who joined Bowaters Southern from Coosa River in





Moves at K-C, Coosa River
A. G. WAKEMAN (left) pres., Coosa
River Newsprint Co., Coosa Pines, Ala.,
was elected vice pres. of Kimberly-Clark
Corp., according to John R. Kimberly,
pres. and chairman, Mr. Wakeman will
continue as pres. and chief exec, officer
of Coosa River but administration will be
directed by PHILIP A. BACHELDER directed by PHILIP A. BACHELDER (right), who has returned to U.S.A. to be vice president, secretary and director of the newsprint company. For past couple years he was general manager in Mexico City for newly acquired Aurora Mills for Kimberly-Clark. Before that he was secretary at Coosa River and served in K-C organization in east and in Neenah, Wis. Mr. Wakeman will transfer his head-quarters to Neenah later this year.



"I don't care how much of a hurry you're in—you still gotta go down stairs to the wash room'

1953, when the Calhoun, Tenn., mill was little more than a hole in the ground, takes over as industrial relations mgr., replacing GEORGE KOONS. GEORGE JACKSON, asst. sulfate supt. at Calhoun, has stepped up to temporary duty with Bowaters Research & Development. He'll assist in design of the new mill at Catawba.

J. T. SHANKLES has taken over the duties of late MEL FARRIS as pulp supt. of Owens-Illinois mill at Valdosta. W. M. BUEDINGEN has left Owens-Illinois' Big Island mill and is now asst. to paper mill supt. at Valdosta. Some changes, too, at O-I's Jax mill: R. W. McCORMICK is gen. supt. and W. E. ROGERS is paper mill supt.

MELVIN L. SHELTON, former gen. mgr. of Container Corp.'s Ft. Worth plant, is now mgr. of the new shipping container div. of Fleming & Sons, Inc., in Dallas . . . J. M. EHMAN has been appointed Birmingham asst. dist. mgr. for Raybestos-Manhatten . . . Corn Products Sales Co. has a new branch mgr. at its Atlanta office, A. N. McFAR-LANE, bulk salesman in the mill starch div. before his recent promotion. He is a graduate of North Carolina State, began with Corn Products in 1946. . .

FRANK R. PROPERZI, onetime asst. mgr. of Lawless Bros. Paper Mills, Rochester, N. Y., due congratulationshe's asst. prod. mgr. of Crossett Co.'s bleached foodboard mill, a new position. Also in recent news at Crossett: C. L. BROWN, now asst. prod. mgr. of the kraft mill; PATRICK FLAHERTY and RAYMOND WHORTON, new additions to Research Div., and RICHARD HOLLOWAY, geologist, who'll specialize in water distribution. .

Promotions recently at Brunswick P&P-W. J. BROWN is now maint. supt.; J. A. CORBITT has taken over duties of chief eng. and J. L. BROWN succeeds W. J. as pulp mill supt. Pulp operations have been divided into two phases with H. R. WADE supt. of chem. recovery and brown stock and A. R. CARRICK supt, of bleach plant and machine room . . . LEON TIMMER-MAN, Purdue grad ('49), is new Southern district mgr. for Buffalo Pumps. Office is in Atlanta, . .

Some of these appointments already have been reported by PULP & PAPER, but here is a more complete list of key men for the new Dierks Paper Co. kraft mill at Pine Bluff, Ark., where pulp mill and Black-Clawson 166 in. paper machine start up this fall: I. C. PLUMLEE, gen. supt.; ROGER RICHEY, plant engineer; RICHARD TALLEY, pulp supt.; F. H. SINGLETARY, paper supt.; JEFF MALONE, master mechanic; ROY SCOTT, chief electrician; M. J. COOK, chief chemist; and D. R. PICHON, JR., personnel mgr. All these are now at Pine Bluff. . .

Secretaries at Champion Paper & Fibre's Pasadena, Tex., mill have been making the news. VIRGINIA BLAKE-MORE, secretary to A. M. KOURY, industrial and community relations mgr. (and recent "Boss of the Year" of National Secretaries Assn.), snagged second prize in John W. Bolton & Sons' 10th annual pulp and paper essay contest. Virginia is no stranger to paper mills, she's a native of Crossett, Ark., where

her dad worked. HAZEL HANSEN, secretary to PAT JOHNSON, supervisor of management planning at Pasadena, was recently named "Secretary of the Year" by Houston chapter of National Secretaries Assn. . .

JOHN L. AIKENS, engineer Rayonier's Hoquiam, Wash., mill has been transferred to Jesup, Ga.

National Aluminate Corp. (Nalco), has expanded its technical service in the Southeast with the addition of ARTHUR KOPISCH, chem. engineering grad of the Univ. of Wis., who will work out of Richmond, Va., and LOUIS LEWIS, Stevens Institute graduate, who will make his headquarters in Columbia, S. C.

LAURENCE (BRAD) BRADBURY, formerly at Pensacola, is now asst. to STEVE KAPTAIN, St. Regis mill mgr. at Jacksonville. He graduated from Principia College, Elsah, Ill., has two girls, age 6 and 11.



In New Posts in East

(L to r) FREDERICK S. LEINBACH (L to r) FREDERICK S. LEINBACH has been elected executive vice pres., Riegel Paper Corp. He has been with Riegel 25 years, started as a chemical engineer for product development at their Milford, N.J. mill.
WILLIAM FIEWEGER moves from plant manager, Munising Paper Co., to New Milford, Conn. to be manager of the new Kimberly-Clark creped wadding mill and converting plant being built

mill and converting plant being built

there.
HENRY J. TROLIN becomes asst. vice president, Central National Corp., member firm of the Gottesman organization. The 20-year industry veteran has done graduate work at the N.Y. State College of Forestry (pulp and paper technology), has a master in business from Harvard and b.s. from NYU.

Northeast Notes

The next time TED DETCHER, president, and WARREN BROWN, engineering, Chemical Linings, Inc., from Pittsburgh to Watertown, N.Y. they will remember a blinding summer rainstorm. With radio contact ruined, the pilot circled Kane, Pa. to attract attention. Some 400 cars responded to a call for volunteer motorists to light the golf course with headlights. The plane landed but brakes failed on the wet grass and it rolled over a bunker. No one was injured

ABRAHAM LINCOLN JOHNSON, 91, believed to be oldest active employe in the paper industry (readers: is this



SAVE 1 OR 2 COATS OF PAINT ON YOUR NEW PLANT

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As the only American paints made with leadsuboxide, Subox paints provide extraordinary anticorrosion protection. Lead-suboxide is chemically active: Actually works to prevent corrosion.

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Available in many attractive modern colors. Write for brochure: "Plan Painting of New Plants to Reduce Costs".

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Established 1924 **8 Fairmount Plant** Hackensack, N. J.

PULP & PAPER

Strictly Personal

true?), has retired from the Kennebec Mill of Hudson Pulp & Paper Corp., Augusta, Ma. . . . CHARLES MILLER has moved from St. Regis Paper Co.'s. Bucksport, Me., mill to their Central Technical Lab at Deferiet, N.Y., as chemical engineer, coating . . . AN-THONY ANABLE has rejoined the staff of Dorr-Oliver as manager of technical data div.

JACK SWEERS heads up the industrial engineering dept. P. H. Glatfelter Co. MIKE BENNETT has joined him as

methods technician, moving over from quality control dept. . . . RAYMOND C. COMINS, president, Sanitary Paper Mills, Inc., East Hartford, Conn., writes that Perkins-Goodwin Co. has purchased a minority common stock interest in his mill and will participate in management. S. EARLL CHURCH, associate professor of pulp and paper technology at State U. of New York at Syracuse, has joined Rayonier, Inc. as technical service representative. He has a m.s. in forestry, will have his ph.d. within the year. He began

as a millhand with Burrows Paper Co. in 1941, then to International Paper at North Tonawanda, N.Y., as lab assistant, then Rohm & Haas as research chemist...

ROBERT WHYLAND, son of BOB WHYLAND, woodlands mgr. for Finch, Pruyn & Co., Inc., graduated from high school. Future: college . . . HARRY E. EARL has been promoted to director of purchasing and traffic for Finch, Pruyn . . . FRANK MARCHETTI, Titanium Pigment, is new publicity secretary for Metropolitan TAPPI . . WILLIAM T. WHITE, chairman of Union Mills Paper Mfg. Co. and Universal Paper Bag Co., recently died at Princeton, N.J. . . .

JOHN A. MacNEAL, JR., from Scott Paper Co., Chester, Pa., has joined Downingtown Paper Co.'s design engineering dept. . . . CHARLES J. GUENTHER, 79, New England sales engineer for Stickle Steam Specialties Co., since 1912, died at Leominster, Mass. . . . RAN-DALL G. SATTERWHITE, JR., has been promoted to asst. supt., of paper sensitizing div., at Kodak Park Works, says IVAR N. HULTMAN, Eastman Kodak v.p. and general mgr. of the plant . . . NEIL M. BARBER is manager of Hooker Electrochemical Co.'s new district sales office at 6 Penn Center Plaza, Philadelphia 3, Pa. JOHN J. WOJNAR will be office manager. . . .

OLAF NIELSEN, JR., formerly exec v.p., Gaillet & Hartig Co., Inc., has joined Reinhold-Gould Inc., as vice president. He will direct pulp sales, exporting and importing. He's a native of Drammen, Norway, has also been with Elof Hansson, Inc., Atterbury Bros. and Van Reekum Paper Co. . . VINSON M. STOUCK, vice president and general manager, New York and Penn, has retired. He will continue as a director and consultant at Lock Haven. Pa.

JOHN J. McDONALD, manager of pulp and floc sales, Brown Co., has been elected a director at large of the Armed Forces Chemical Assn. . . EUGENE R. DONNELLY, vice president and general sales mgr., John Carter & Co., Inc., Boston, died in a drowning accident at Lake Pennamaquan, Charlotte, Me. He had been recognized in the Boston area as an outstanding paper salesman, writes his friend NORMAN HARROWER, president of Linton Brothers and Co. . . .

GORDON K. STORIN, formerly with Hooker Electrochemical Co., has moved over to International Graphite and Electrode Corp., Niagara Falls, N.Y., in technical service . . DAVID T. BARRY has been named director of marketing for Stowe-Woodward, Inc.

WILLIAM R. BOWEN is new asst. plant mgr. for services at Scott Paper Co.'s Chester, Pa., plant. Replacing Mr. Bowen as Chester plant engineer is STANLEY E. PRICE. He was plant engineer at the Fort Edward, N. Y., mill.



to a fraction of a thousandth of an inch, on a tiny instrument

Because our plant is completely integrated, every wire we ship

from the raw metals to your finished fourdrinier wire ready for

We are proud to say they are truly ours - "from ingot to

has undergone thorough and continual analysis, control and testing

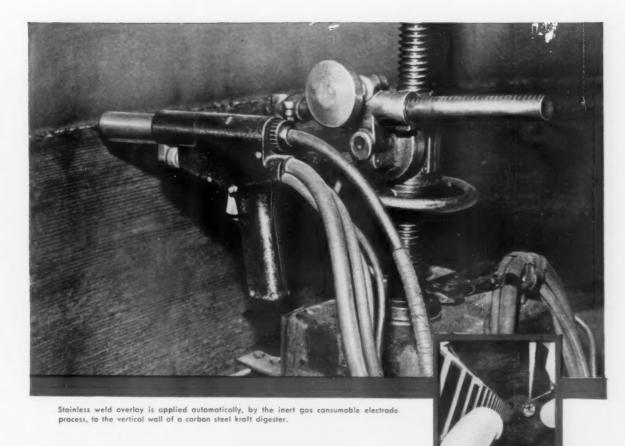
part or a huge loom frame.

quality paper production.

EASTWOOD-NEALLEY CORPORATION

Belleville, N. J.

fourdrinier wire.'



HOW STAINLESS OVERLAY KEEPS KRAFT DIGESTER IN SERVICE AT 1/3 THE COST OF REPLACEMENT

Interior of overlayed vessel. Six thousand pounds of Crucible Rezistal stainless, 1/16" overlay welding wire was used to cover 1,400 square feet of area. The cost: One-third that of vessel replacement.

This is one of a number of carbon steel kraft digesters which have been successfully overlayed with Crucible stainless steel. At one-third the cost of a new unit.

In digesters, where corrosion — accelerated by splashing and spraying of hot liquors and gases — causes dangerous thinning, stainless weld metal can be applied directly to the carbon steel. It's an accepted process that has proved effective over years of mill operations. And it has the added advantage that it may be applied locally where needed to extend the life of the digester.

Not only in digesters, but throughout the paper mill, stainless equipment prevents rust, corrosion, and erosion. It adds high strength and rigidity. And stainless offers excellent resistance to wear and cavitation, along with its resistance to the alkalies and many of the acids and their salts.

If you'd like further details concerning this, or other stainless applications, please write Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.

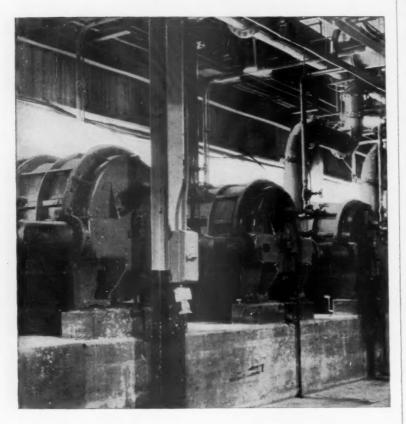
CRUCIBLE

first name in special purpose steels

Crucible Steel Company of America

Canadian Distributor - Railway & Power Engineering Corp., Ltd.

What, actually, do Vacuum Pumps on paper machines handle?



Paper mill engineers know that it is actually a mixture of air and water vapor, but the custom of rating vacuum pumps in terms of air capacity alone causes this important fact to be frequently overlooked.

The presence of this water vapor causes a considerable reduction of the effective air handling capacity of any vacuum pump except the Nash. In the Nash Vacuum Pump the bulk of this water vapor is effectively condensed, due to the Nash operating principle. The air handling capacity of the Nash is therefore not reduced.

That is one of the reasons why Nash Vacuum Pumps are standard in over a thousand leading Paper Mills.

NASH ENGINEERING COMPANY

443 WILSON ROAD, SO. NORWALK, CONN.





In Midwest News

GEORGE S. HERBERT (left), succeeds CLARK E. PATTON as pres. of Patton Mfg. Co., Springfield, O. Mr. Herbert joined Patton as gen. mgr. of paper mill machinery div. in Sept., 1954, and became vice pres. i/c mfg. in Sept., 1955, He is a graduate of Denison Univ. LAURENCE A. COMBS (right), vice pres. of Container Corp. of America, Chicago, was appointed chairman of National Paperboard Assn. industrial relations committee. A native of Findlay, Ill., Mr. Combs joined Container Corp.'s patent dept. in 1926.

Midwest Medley

WILLIAM R. (BILL) BEERMAN is new manager of the Munising Paper Co., Munising, Mich., division of Kimberly-Clark. He moves up from plant engineer to succeed BILL FIEWEGER, who went to New Milford, Conn., to manage new K-C mill there. Bill Beerman is a graduate of Northwestern U., formerly worked in K-C operations and staff engineering at Neenah. . . .

RUDY HERBIG, Central Western sales manager, Reliance Electric & Engineering Co., and his staff of four sales representatives and two service engineers, moved into new and larger Chicago offices, the subsidiary Reeves plant, 3300 No. Knox Avenue, Chicago 41, Ill.

DWIGHT L. STOCKER, president, KVP Co., Parchment, Mich., succeeds BERT H. COOPER, vice pres., Kalamazoo Paper Co., as chairman of the advisory committee on paper technology at Western Michigan U. L. C. NICHOL-SON, vice pres., W. C. Hamilton Co., Plainwell, is new vice chairman and DR. A. H. NADELMAN, head of the paper technology dept., WMU, continues as secretary. JAMES WISE, pres., Kalamazoo Paper Co., joins the committee. FREDERICK FISCHER, GREENE and Mr. Cooper received certificates of appreciation for service on the committee. . . . PERRY L. SMITHERS, Winnetka, Ill., becomes public relations director of the Folding Paper Box Assn. in Chicago. He is a graduate of the U. of Illinois.

J. H. DAVIDSON, chief engineer, Minnesota and Ontario Paper Co., International Falls, Minn., announces promotion of WILLIAM C. RINDSLAND to asst. chief engineer, succeeding STAN-LEY C. STRATTON who is retiring after 25 years with Mando. Born in London, England, Mr. Rindsland joined Mando in 1947, resigning in 1952 to move to Rayonier Inc. Later he was works engineer at Wood Conversion Co. before returning to Mando in 1956. He has a civil engineering degree from U. of Minnesota. . . F. E. BOECKH, asst. gen. mgr., announces the appointment of HENRY E. STORMO as superintendent of electric power of the Minnesota and Ontario Paper Co.'s specialty paper and Insulite fiberboard mill at International Falls, Minn.

A. . . . GERALD L. MATTHEWS joins Ahdawagam div. of Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis. as staff artist. He is a graduate of the U. of Wisconsin. . . . R. CALVIN SKILLMAN, Champion's director of public relations, recently received a George Washington Honor Medal of the Freedoms Foundation at Valley Forge for Champion's motion picture "Production 5118" which outlines the risks in failing to communicate ideas and thoughts to others. This is the sixth

award this film has won. DONALD G. WEYENBERG, millwright, NICHOLAS RUYS, machinist, and ROBERT H. STUYVENBERG, pipefitter, graduated from the Kimberly-Clark Junior Trades program recently. C. G. RUSSELL JOHNSON, vice pres. and chief engineer of Kimberly-Clark, presented state certificates to the three graduates. Mill Manager HARRY W. PIERCE awarded Kimberly-Clark certificates and VICTOR E. ZEUTHEN. plant engineer, presented plant maintenance manuals. . . . R. F. DUNGER, secretary and treasurer of Combined Locks Paper Co. and treasurer of the D. M. Bare Paper Co., died May 19. . . FRANK J. DVORAK, treasurer and director of Marathon Corp., died unex-



pectedly following a heart attack.



New Representatives

Appleton Woolen Mills, Appleton, Wis. announces appointment of W. W. JACK-SON (left) as Southwestern and J. L. MINNICH (right) as Southeastern sales representative. Mr. Jackson has twelve years of production supervisory experience with Alton Box Board Co., Potlatch Forest Inc., International Paper Co. at Springhill, La., and Southland Paper Mills. Mr. Minnich attended Miami Univ., Oxford, O., receiving a b.s. degree in business administration in 1951. He was with Black Clawson Co., Watertown, N. Y. 17 for six years.



*means Good Business...

This Goslin-Birmingham self-supporting sextuple effect evaporator installed at a leading Southern Paper Mill is designed for two steam pressures. Provisions for another body at a future date will convert the evaporator to a septuple effect unit for greater steams and economy.

Regardless of size, G-B's experienced process engineers will design a unit to handle any required evaporation you specify.



GOSLIN-BIRMINGHAM
MANUFACTURING CO., INC.
BIRMINGHAM, ALABAMA

PULP & PAPER

Strictly Personal

Far West Flashes

ROSS H. LAWRENCE, his wife and daughter have moved from Chicago to Seattle. He's with Williams-Gray Co., Chicago, and will call on the same mills he's been calling on, representing Lindsay Wire Weaving Co. wires and Mt. Vermon Mills Inc., dryer felts in the States and Niagara Wire Wearing Co. wires in British Columbia. Mr. Lawrence

is a native of San Francisco. His new address is 6001 Ann Arbor Ave., Seattle, Wash. . . .

Following promotion of R. P. WOL-LENBERG to vice pres.-operations and mill mgr. of Longview Fibre Co.'s headquarters plant at Longview, Wash., these other promotions are announced: DAN B. PHILLIPS, formerly mgr. of firm's Oakland, Calif., box plant, succeeds Mr. Wollenberg as mgr. of Container Opera-



Bogalusa, Camas Promotions

(L to r) W. H. MAXWELL, bag factory supt. at Camas, Wash., becomes supt. of CZ Gaylord division multiwall bag plant being bulit at Bogalusa, La.; W. O. BEATON, formerly assistant bag factory supt. at Camas, succeeds Mr. Maxwell as head of Camas dept.; B. O. REESE, yard foreman, advanced to yard supt. at Camas June 1 when W. F. Palmer (not shown) retired after 41½ years service.

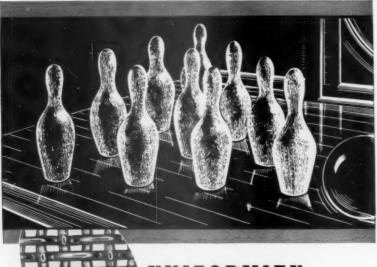
tions; H. WILLIAM FREED, asst. mgr. of Timber & Log Div., promoted to mgr. of division succeeding ARNOLD H. BRANDIS who retired June 1; W. Q. REINIGER, formerly mgr. of Seattle plant, becomes mgr. of Longfibre's Oakland box plant; JOHN W. CLARKE promoted from supt. to mgr. of Seattle box plant, JOHN F. HART, container development engr., promoted to mgr. of container plants at Longview, and CHESLEY M. CROCO advanced from tour foreman to supt. of Seattle plant. . . .

ELMER E. DAVIS, who retired recently as paper mill supt. at Crown Z Lebanon, Ore. mill, has been appointed gen. supt. of the Khulna pulp-paper mill project under construction in East Pakistan for Pakistan Development Corp. . . .

In Weyerhaeuser Pulp Div. ELWOOD CARTER was promoted to kraft shift foreman at Longview, BYRON SMITH, personnel assistant, advanced to accountant at Springfield, replacing RAY FRYMAN who transferred to Tacoma office.

WILLIAM R. TISE is appointed Western belting engineer for the conveyor and elevator belting dept. of U. S. Rubber Co., according to H. E. PRUNER, commodity manager. A graduate of Virginia Polytechnic Institute, Mr. Tise joined U. S. Rubber in early 1956. His headquarters will be in Los GORDON GRANNIS Angeles . . joins Crown Zellerbach Corp. as public relations asst. at San Francisco headquarters. He is an alumnus of the U. of Idaho and was former advertising, publicity and promotion manager for ty station KOVR in San Francisco. . .

BEN KIRBY has been promoted to director of engineering and development at Electric Steel Foundry Co. and is manager of the newly created Spuncast division; EVERETT LEISURE succeeds Mr. Kirby as chief engineer. The two will be in charge of all phases of ESCO engineering except that of Construction



UNIFORMITY

Is it axiomatic to say that uniform quality in Fourdrinier wire cloth makes for uniformity in paper? Annealing, weaving, seaming, stretching, finishing—every vital operation in the manufacture of Lindsay wires, is brought to bear on that objective. This has been true for more than 50 years.

THE LINDSAY WIRE WEAVING COMPANY
Cleveland 10, Ohio



FOR PAPER MANUFACTURING

1. WET BARK

Containing 70% moisture, averaging only 5,582 BTU's per pound, flows into the hopper.

2. THE DOUBLE SQUEEZE

First, it is squeezed between the top roll and feed roll. Second, between the top roll and discharge roll. The combination of pressure and shredding (at two points) reduces wet bark to small, dry particles.

3. DRY FUEL

... with moisture as low as 47%...
averaging 7,390 BTU's per pound.
Note, too, how large pieces are
reduced to small particles...
assuring more efficient combustion.

CONVERT WET BARK TO DRY FUEL with a



Equally efficient for knots, tailings and other mill waste. A continuous, low-cost operation.

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DEPT. PP-8

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PULP & PAPER

Strictly Personal

Equipment division . . . SAM J. ROBIN-SON, vice pres.-gen. mgr. of Publishers' Paper Co. succeeds the late R. S. WERTHEIMER as president of Pacific Coast Assn. of Pulp & Paper Manufacturers and M. J. OTIS, resident mgr. of Crown Zellerbach West Linn plant replaces Mr. Robinson as treasurer.

E. ROBERT LITTLE JR. joined American Potash & Chemical Corp. as San Francisco area sales representative under Dist. Mgr. ROD TAFT according to WILLIAM M. CLINES, Western general sales manager. . . . PAUL FROST, head of pulping section, Crown Z Central Research Dept., Camas, has been named chairman of TAPPI acid pulping committee . . . ALLEN M. CADIGAN, chief chemist for St. Regis Paper Co. at Tacoma since 1937, retired June 1 at age 65 under company pension plan. He graduated from Penn State. He is an au-

thority on pollution and may continue in that work. HAROLD T. RANDLES, member of the technical staff, has been appointed as Mr. Cadigan's successor at the Tacoma mill . . . GRANT L. HUBBARD, from Arizona State College, and HANS A. SCHELKE, graduate of Higher Textile College, Enschede, Holland, have joined Crown Z's Central Research Dept. at Camas and LYLE J. GROSS returned to CRD July 1 following 3½ years in U. S. Navy. . . .

Promotions at Western Kraft Corp., Albany, Ore., announced by Plant Mgr. C. R. DUFFIE: THOMAS D. SYME became plant supt. replacing HUGO TRYGG who resigned; M. R. MORRISON senior foreman, advanced to assistant plant supt.; GEORGE AHLQUIST, chief chemist, moved up to senior foreman, and WALDEMAR SETON III, project chemist, became chief chemist. . .

ARTHUR A. COFFIN, tech, service representative of Titanium Pigment Corp., Chicago, married Miss BESS COOK in late May then took off on combined honeymoon-business trip tour of Pacific Coast.

DR. PAUL KRUMPERMAN is moving to the Bay area, California, from Memphis to represent Buckman Laboratories, says William D. Stitt, sales mgr. Dr. Krumperman may locate at Walnut Creek. HUGH GARDNER, Portland, Ore., continues as rep in the Pacific Northwest. . . .

To Operate Kieckhefer-Eddy

Here are executive appointments in Weyerhaeuser Timber's new Kieckhefer-Eddy division: In Tacoma, Wash., HOW-ARD W. MORGAN, president; in Camden, N.J., HERBERT M. KIECKHEFER, senior vice pres., C. H. CARPENTER, vice pres. sales, shipping containers, D. C. WILL, JR., vice pres, milk carton dept., V. D. DONAHUE, vice pres. and controller, and, in Delair, N.J., S. B. CLARK, vice pres.; in Chicago, Ill., ANTHONY HAINES, vice pres. Eddy Operations, E. K. RADKE, vice pres. sales, shipping containers, and T. E. MORRISS, vice pres., boxboard and folding boxes.

Column from Canada

DON LIVINGSTON, Esco Ltd., Vancouver, B.C., is sporting a new golf bag, a present from Western Branch, Canadian Tech. Section, which he served four years as secy-treas., until succeeded by BOB ALPEN, C. C. Moore & Co.'s Vancouver manager. . . .

E. L. McCAMMON has been named control supervisor at Kenora, Ont., mill of Minnesota & Ontario Paper Co. He will be responsible for the mill's paper and pulp testing, instruments and quality control activities . . . GORDON GRA-

MATERIALS HANDLING



Constant improvement and refinement in the art of paper manufacturing keeps the industry on a highly competitive basis. Important in the final accounting—if not in the final product—is plant efficiency. An important item in any budget is the handling of chips and other bulk materials, important both in cost of operation and in its efficiency.

Rader's staff of experienced engineers brings you increased efficiency with increased savings, using high pressure pneumatic conveying systems that keep materials moving at peak speeds. Write or phone for information.

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Municipal Airport

HAM has been appointed wood room supt. of the mill, replacing DONALD SHAW, who died earlier this year . . .

PRENTICE BLOEDEL, director of MacMillan & Bloedel, who has headed the advisory committee of the Canadian Forest Products Laboratory at Vancouver, B.C., has resigned after three years of service. JOHN G. PRENTICE, pres. Canadian Forest Products, has succeeded him, and the new vice chairman is JOHN LIERSCH, vice. pres., Powell River Co. . . .

JOHN N. FRANKLIN has been made plant manager of Tasman Pulp & Paper Co. at Kawerau, New Zealand. He was formerly with the Bowater's organization, first at Corner Brook, Nfd., and later at central research laboratories at Gravesend, England. . . . J. G. E. ELLIS, Scottish-born engineer who has been with the Rayonier organization since the early 1930's, has been named chief engineer of the central engineering division, Alaska Pine & Cellulose, Vancouver. . . .

PETE FRATTINGER, for many years at Ocean Falls, B.C., with the Pacific Mills organization as plant engineer, has joined MacMillan & Bloedel as development engineer with headquarters at Harmac, Vancouver Island. In recent years he had been with a machine works in New Westminster. . . . RON FEARN, formerly with Bartram Paper Box Co. in Vancouver, B.C., has been named supt. paper converting division of MacMillan & Bloedel. . . SAM L. MacKAY, formerly with Pacific Mills and equipment supplier in the British Columbia area, has imported a power yacht from the United Kingdom-60 ft. pinnace, first of its type on the Pacific coast.

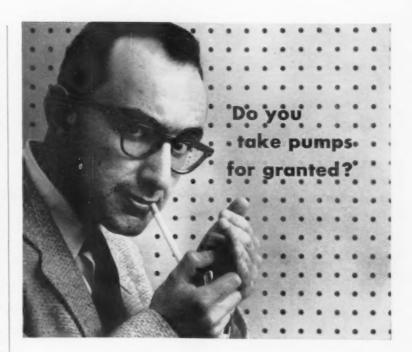


In Key Posts for Abitibi

KEN. G. BOOTH (left), new manager of research for Abitibi Power & Paper Co., Ltd., Sault Ste. Marie, Ont. A ph.d. graduate of McGill Univ., Dr. Booth served in Crown Z Central Research at Camas, Wash., for several years, more recently as manager of fiber research. He served in the Canadian air force in WW II.

II. W. G. REEKIE (center), chief engineer, was named manager of engineering for Abitibi. Mr. Reekie was born in Lyleton, Man., and graduated from Univ. of Manitoba. He has been with Abitibi since 1946.

N. SHISKO (right), becomes chief engineer. A native of Hearst, Out., he has b.sc. from Queen's Univ. He was formerly assistant chief engineer.



Pumps are old stuff to us. But now and then we're still amazed at all the work they do. And we know it's important that they keep working.

Take, for example, the 39 Goulds pumps ordered for the new plant being built by the Buckeye Cellulose Corporation.

A number-happy chap figures they'll do the work of a bucket brigade of about 3800 men—and cost considerably less.

Those 39 pumps, by the way—they range from a little one-inch model up to five in the 14" size—can move well over 8,000,000 gallons of liquid an hour. Because much of Buckeye's pumpage is corrosive, many of the pumps are of stainless steel.

The gist of all this: Pumps are important in almost any plant—they deserve a lot of careful planning—the kind of planning we've been doing for 109 years.

The kind of planning we can put to work for you whether you pump acids, paper stocks, corrosive alkalies, salt water, slurries, or just plain old water.



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your valve problems with Fabri-Valves

Fabri-Valve fabricates valves to meet any specification old or new. Whatever your need, new installation, modernization or replacement, F-V can economically supply the answer to your valve problem. Custommade or standard, F-V's are available in all sizes from 2" up in mild steel, stainless steel, nickel, or any workable combination to meet your specific problem. Contact your distributor for details on how Fabri-Valves can help solve your valve requirements.

> CUSTOM-MADE to meet new plant specifications and existing installation problems for replacement and modernization.

> STANDARD Fabri-Valves are kept in stock for economical replacement without costly loss of time.



Fabri-Valve Co. of America manufactures the largest variety of pulp stock valves to meet your specific and special problems.

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a line of modern valves for

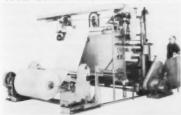
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PULP & PAPER

New Equipment and Supplies

Web Conditioner for Moisture



J. O. Ross Engineering Corp., 440 Madison Ave., New York 16, N. Y., announces a compact, low-cost web conditioner for adding moisture in controlled amounts to paper and other web materials which might require moistening. The conditioner comprises a steel enclosure slightly wider than the web to be conditioned, approximately 38 in. high and 16 in. thick. It is mounted in the path of the paper at any convenient location and the web travels vertically through it, entering and leaving through slots at the top and bottom, respectively. Models are available for horizontal web travel.

The outer casing has a layer of insulation between it and an aluminum lining and within this are two systems of steam piping. One sprays the web as it passes between opposing banks of nozzles. The other, next to the aluminum lining, heats the chamber to prevent condensation and dripping.

A Slitter Knife Grinder



Hanchett Mfg. Co., Big Rapids, Mich., announces two new machines developed exclusively for precision grinding conditioning of all types of circular slitter knives used in the corrugated, fiberboard, container, hardboard, paper and tissue mills. Their design permits of rapid generation and duplication to precision

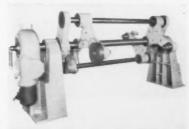
tolerances bevels of either single, or double or compound, as required on slitters, scoring blades, slotting segments and split knives.

The standard machine—Model SK-24—is of the semi-automatic type featuring automatic power oscillation of the grinding wheel spindle. Down feed of grinding wheel is manual through a finely graduated screw and handwheel.

The work holding fixture mechanism is as follows. Slitter knives are placed in a horizontal plane, rigidly supported to a backing plate. Fixture revolves mechanically, at the correct work speed for smooth, uniform cutting action. No chatter marks on the knife edge are developed through this positive drive as the cutting action is smooth and vibrationless. Top slitters are driven via a hardened pin. Bottom slitters—with adaptor plate and sleeve to match mounted as a unit with the adaptor.

The wet grinding system is of the gusher type, motor driven, and is unique in its coolant application.

Unwinder is Continuous



This new continuous, shaftless rotating unwind stand Model 42-100 is now offered by Black-Clawson Co.'s Dilts Div., Fulton, N.Y.

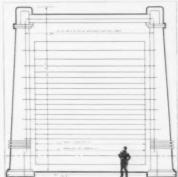
Features: Different roll widths can be run successfully without stopping for set ups. Each set of arms can be independently adjusted for roll widths manually or by power screw attachment. Rolls 50-in. dia. by 100-in. face can be handled. Pressure rolls and cut-off knife can be added for full speed flying splices.

Introduce Fork Mast Assemblies

Two new series have been introduced by Mercury Mfg. Co. Duoscopic has a 2-1 lift ratio; Triscopic, a 3-1 lift ratio.

Features: Uprights milled from solid stock, smaller rollers and other refinements, offer shorter turning radii and higher overall lifting ranges. Mercury is at 4044 South Halsted St., Chicago 9, Ill.

Builds Largest Supercalenders



Appleton Machine Co., is building for St. Francisville (La.) Paper Co. new Time-Crown Z mill, the two largest supercalenders ever made in this country. Delivery of the 250-in. roll face 370-ton machines is scheduled for summer 1958. Each super will be approximately 32 ft. wide, and 33 ft. high. They will cost more than one million dollars. Each will have a 10 roll complement, and will obtain pressure from a pneumatic system. They will handle rolls of paper up to 72 in. in diameter, using a surface windup and a center type unwind with a spool transfer. Their speed will be 2500 fpm, with 1,000 ppi pressure at bot-

Covers for Outdoor Storage



An answer to the problem of outdoor storage for rolls of corrugated paper is offered in an individual protective covering which protects against rain, fire, snow, mildew and moisture, saving roofed storage. The re-usable "canvas cap" provides a cheap, practical and easy way of storing rolls without having to put them

Hoosier Tarpaulin Co., 1302 West Washington St., Indianapolis 6, designed the reusable canvas caps that snugly cover the top open end of the

Equipment & Supplies

roll for Acorn Corrugated Box Co., Chicago. It is made of water-repellent, flame-and-mildew-resistant, canvas. Grommets are spaced around the bottom edge of the hood, for tying if desired.

Switchboard of New Design

A new low voltage switchboard, built in standardized modules for application versatility, is announced by R. C.

Wilson, manager-marketing for General Electric's Distribution Assemblies Dept., Plainville, Conn. This switchboard is designed for any incoming service, 600 volts or less. Its mains are rated 800 thru 4,000 amperes. The new switchboard is designated the Type DR Universal because the structure and vertical bus bars are drilled to accommodate virtually any combination of seven different lowvoltage protective devices in three 1) circuit breakers-both classes: molded-case breakers and large AK air circuit breakers; 2) circuit breaker, current-limiting fuse combinations, either the standard breaker with cur-

rent-limiting fuses or the current-limiting, molded-case breaker with integrally mounted current-limiting fuses; and 3) fused interrupter switches: including the General Electric new Type QMR interrupter switch; a non-automatic breaker with series fuses; and the General Electric Type LB-1 service protector, a new combination highcapacity switch with current-limiting fuses for service entrance and feeder applications.

Pump is Corrosion Resistant



A new glassed centrifugal pump for handling corrosive liquids, designed by Goulds Pumps, Inc., 30 Black Brook Road, Seneca Falls, N.Y. and Pfaudler Co., Rochester, N.Y., is described in Goulds Bulletin 725.2. Available in heads up to 140 ft., the Fig. 3708 is built in four sizes for capacities up to 700 gpm. All parts of the pump coming in contact with corrosive materials are glassed and resistant to all acids except hydrofluoric at 212° F. Glass is permanently fused to the metal in successive applications and firings.

Instrument Measures Levels



A new differential pressure liquid level transmitter, Type 13 FA d/p Cell Transmitter, mounts directly on a tank nozzle to provide a simple method for measuring viscous or slurry-type liquids in open or closed vessels. Manufactured by Foxboro Co., Foxboro, Mass., it operates on the force balance principle and main-

PAPER MILL AND



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• Newsprint • Wax Paper • Blue Print Paper • Fine Papers • Cash Register and Adding Machine Paper • Cellophane • Tapes

OR any paper that can be wound on a core!

DURO Returnable Cares, with 3" to 6" I.D. Bermico Metal Ends, are made to take abuse on high speed presses. Also made in any diameter and length without metal ends. Proven superior. RHINO non-returnable cores supplied in sizes to

fit your needs. Specialty cores from $\frac{1}{4}$ " I.D. up, and $\frac{1}{2}$ " to 24' long. Write for free descriptive core catalog at no



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DEPENDABLE SOURCE OF SUPPLY

tains calibrated accuracy over a wide range of ambient conditions.

The level measuring element—a silicone-filled diaphragm capsule—is assembled in a 3-in. flange for flush mounting on the side of a vessel. Head of liquid in the vessel applies force to the high pressure side of the capsule which is opposed by force on the low pressure side. The low pressure side may be open to atmosphere for measurement of open tank level. Or it may be connected by piping to the top of a closed tank to balance out static pressure. Adjustable range suppression and elevation springs can be easily attached to accommodate the various installation arrangements.

Conveyor System is Automated

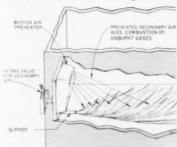


An automated conveyor system designed for moving heavy rolls, skids and pallets has been introduced by Engineering Products Co., Chicago.

The system is mounted into the floor, flush to floor level; prefabricated with straightaways built in varied lengths. Powered electrically, all controls, conveyors and turntables can be adapted to a variety of applications where banding, tieing are being done manually.

Features: All support rollers have sealed and shielded bearings, fully lubricated at time of manufacture; require no further lubrication; support rollers can be easily removed; controls centrally located. Write to 122 South Michigan Ave., Chicago 3, Ill.

Preheater Makes Savings



Fuel savings up to 25% and marked reduction in smoke and soot can be obtained, says The Preheater Corp. of America, 415 Lexington Ave., New York 17, by its Boston Air Preheater. Installed in the fire door of the boiler, it supplies preheated secondary air



Panalarm Annunciator pinpoints process "off-normals"

In the process industries and among users of automatic machinery, trouble is minimized when it's caught early. That's the purpose of the Panalarm Annunciator System—a continuous monitor of your process.

One typical adaptation of the modular Panalarm system is engineered to differentiate between the first "off-normal" and subsequent "off-normals" caused by the first. This feature allows instantaneous recognition of the prime source of trouble in a "chain reaction."

Another adaptation is designed specifically for motor start-up and shutdown. It has also been successfully adapted for supervisory control, pump control and programming.

Your Panalarm sales engineer will be happy to make a survey of your requirements to determine whether a Panalarm system can aid productivity and safety in your process. For electrical and mechanical data on standard systems, request Catalog 100B on your letterhead.



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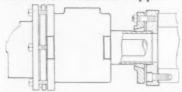
Equipment & Supplies

over the fire bed or burners for maximum combustion of fuel.

Principle: Introduction of secondary air at temperatures high enough to promote maximum combustion of the unburned carbon monoxide and heavier hydrocarbon fractions that linger at the outer flame edges and normally settle out as soot or smoke. Heated secondary air makes it possible to cut down intake of fuel-wasting cold primary air.

Some 50,000 installations have been made in Europe in 10 years.

Eliminates Threaded Nipple



An improved method of connecting Type N Johnson Corp. (Three Rivers, Mich.) joints to journals is offered in the Johnson quick release nipple. It eliminates a threaded nipple, and

makes removal of the joint a fast oneman operation. It requires only the use of a crescent wrench, ends any danger of damaging or crushing nipple with heavy pipe wrenches.

The "Q" nipple consists essentially of just three parts-nipple flange, tapered split ring and journal flange. The journal flange is fastened to journal with countersunk cap screws; it also has threaded studs to which nipple flange is fastened. The tapered split ring fits in a recess in the nipple.

When the nipple flange is drawn up over the ring, the wedging action between the two exerts a tremendous force to lock nipple securely in position. The nipple can be removed again simply by backing off the nuts that hold nipple flange to journal

New Parshall Flume Unit

A revolutionary new Parshall Flume meter, which can accurately measure sewage flow, requires little or no maintenance and the company says can save "literally hundreds of dollars and in many cases more than the cost of the meter itself on construc-tion costs," has been developed by Burgess-Manning Co., Penn Instruments Div. Introduction of the unit, called type ML, was announced by R. A. McQuade, sales manager, who

said precise measurement of sewage flow has heretofore been difficult to ascertain.

Strapping by Air Power



Introduced by Brainard Steel Div., Sharon Steel Corp., this PNC Stretcher and Cutter for heavy-duty strapping features:

1-The only pneumatic heavy-duty tool of its kind available, says the maker, serving dual purpose of tensioning and cutting, rapidly and effi-

2-Easy handling (weight: 12 lbs.).

3-Pneumatic power, insuring uniform tension on each band.

4-Rugged construction, minimizing downtime.

Plastic Leather Belt



J. E. Rhoads & Sons, Wilmington 99, Del., announces a new Tanastic Plastic-Leather reinforced flat belt, combining "the glove-like grip of leather with the super strength of

When designing new drives or re-placing old belts, Tanastic is said to have these advantages: Operates efficiently for life of drive without tension adjustment. No permanent stretch means no tension adjustment and no belt shortening. Dressing is rarely required. The combination of high tensile strength and "true elasticity" permits narrower belt widths and very short center distance between pulleys. Its elasticity absorbs shock like a spring, at same time maintaining belt's high efficiency.

It is widely adaptable-capacities to 500 hp and over; belt speeds to 10,000 fpm; temperature ranges from 20 to plus 160° F. Machine oil and moisture are said to have relatively little effect on performance. Can be



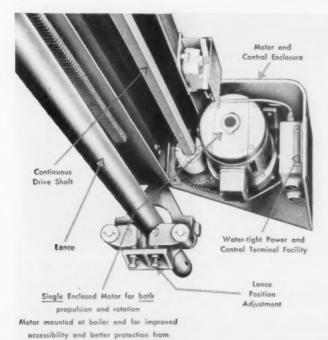
WILLISTON PARK,

FRONT END Single-Motor DRIVE

another important feature of



Series 300 IK LONG RETRACTING BLOWER



As illustrated at the left, only one motor is used to simultaneously propel and rotate the lance tube of the new Series 300 IK. The motor is stationary and is mounted at the boiler wall for easier accessibility and greater protection from physical damage and the elements (note the protective enclosure). This front end single-motor drive is simple and dependable. There is only one set of motor elements . . . one set of control elements . . . and one set of power supply facilities to operate and maintain.

Additional important features of the new Series 300 IK are listed in the panel below. Check them and you will understand why this blower is establishing a new standard of efficiency, economy and dependability in cleaning those heating surfaces that require a long retracting blower. For further information about the new Series 300 IK, ask your local Diamond office or write directly to Lancaster for Bulletin 2111-PP.



Diamond POWER SPECIALTY CORPORATION

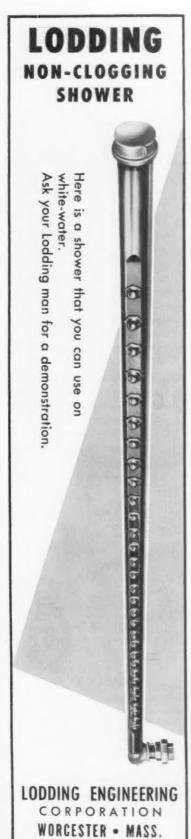
physical damage and elements. (Outboard end motor mounting optional)

LANCASTER, OHIO

Diamond Specialty Limited Windsor, Onlario **Backbone and Protective Cover**

- Compact, Accessible Electric Power and **Control Terminal Facilities**
- Nozzle-Sweep-Every-Inch Cleaning Pattern Improved "Type A" Nozzle
- Positive Gear Carriage Drive
- Poppet Valve with Adjustable Pressure Control
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- Oversize Lance (Step-Tapered for Extra Long Travel)
- Auxiliary Carriages for Extra Long Travel Designed for Quick, Easy Servicing

No other blower gives you all these advantages.



made endless around pulleys and is suited for multiple pulley drives, high pulley ratios, crossed or quarter turn and cone drives.

Filter Uses No Packing Gland



Denver Equipment Co., P.O. Box 5268, Denver 17, Colo., announces a new Agitator Type disc filter which gives increased filter capacity and ease of maintenance. Pulp agitation is supplied by a pulsating unit located below filter discs. Design and location of agitation mechanism provides correct type agitation to keep solids in pulp in suspension; agitation speed is adjustable to maintain a homogeneous pulp regardless of its nature. The result is greater capacity and lower final moisture because of the more uniform cake distribution over filter sector.

Redesigned Induction Motors

General Electric Co. has redesigned its a-c induction motors from 40 hp to 125 hp range to new standards suggested by NEMA, which assign a greater horsepower to a given motor frame size.

Features: Substantial weight and space savings, in addition to higher efficiency, quieter operation, improved performance and reduced maintenance. Weight reduction averages 20%; lineal dimensions have been

reduced about 10% and volume about 27%. The new line is a final phase of a five-year design and development program. Phase One involved motors in one to 30 hp range, marketed under GE's Tri-Clad 55 trademark.

New Liquid Detergent For Steam Cleaning

Oakite LSD, a new liquid detergent designed for use in solution lifting steam guns and self generating steam cleaning equipment, has just been introduced by Oakite Products, Inc., manufacturers of industrial cleaning materials and equipment.

Further information about Oakite LSD is available from Oakite Products, Inc., 157 Rector St., New York 6, N. Y.

New Tester for Relays



Originally manufactured for one of the largest oil refineries, this unit is applicable in any large industrial plant for testing overcurrent relays, motor overload relays, voltage relays, complete switchgear timing, throw over schemes, etc.

The output current is accurately adjustable in six ranges from 100 amperes at 10 volts to 2 amperes at 500 volts.

The unit has a built-in ammeter, cycle counter, reactor to provide sinusoidal wave form, Vernier Control, and a DC supply for testing relay targets and seal-in units. For more info, write Multi-Amp Corp., 465 Lehigh Ave., P. O. Box 217, Union, N. J.



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- WET END—breaks up bubbles, disperses foam
- DRY END—increases sheet moisture, improves finish, lowers bulk and caliper
- SAFELY USED anywhere dripless steam desired

Custom Built for Any Machine

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New Paper Uses



ROBERT BOTHFIELD (left), packaging engineer, Container Corp. of America, and KEITH VINES (right) Illinois Canning Co., sales mgr., show new carton use.

New Carton for Cans

Canned corn went to market in a multiple package recently as the nation's fifth largest corn canner started shipping in a three-can carton. The four-color Can Band carton was designed for Illinois Canning Co., by Container Corp. of America. Keith Vines, Illinois Canning sales manager, said 1956's enormous corn crop spurred the switch to multiple packaging. He estimates American canners packed 42 million cases of corn last year. Normal supply is about 35 million cases.

"We need a dramatic way to sell all that corn," he said, "and we think multiple packaging is the answer."

Charles Y. Cain Named To New Hooker Post

Charles Y. Cain has been named administrative assistant to Alfred W. Hanmer, Jr., general sales manager, Durez Plastics Div., Hooker Electrochemical Co., North Tonawanda, N.Y.

Born in New York City, Mr. Cain was graduated from Univ. of Maine in 1938; went to Niagara Falls, as a chemist with International Paper Co., and in 1940 was employed by Hooker. He became Chicago district sales manager in 1952, and two years later was appointed manager, plastics sales at Niagara Falls. In 1955, he was transferred to the Durez Plastics Div. and named sales manager of Hetron polyesters. He resides at 960 River Road, Youngstown, N.Y.



Bubbles in boiling liquid were "frozen" with stop motion by photographer Bernard Hoffman.

Controlling <u>Temperature</u> in Fluid Engineering

Heat is generally only one part of your problem. Pressure, abrasion or corrosion factors usually must be taken into account, too. So if your past experience offers no precedent, you can look to S. Morgan Smith's specialized engineering leadership for assistance.

A number of materials are available to meet extreme working conditions. Here the broad SMS background combines with specialized valve engineering to help you. Perhaps R-S Butterfly Valves can be applied to control volume and flow at high temperatures. Or, if heat and corrosion make extremely accurate timing and fast, drop-tight closure a tough problem, an SMS Rotovalve could be the answer. Whatever your special processing needs, you can get help in protecting your equipment investment.

There is a full SMS line – standard R-S Butterfly Valves ready for fast assembly and shipment from stock, Rotovalves and Ball Valves. A call to our nearest representative will bring information. Or, write S. Morgan Smith, York, Pa., for data on standard valves or special applications.





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CORROSION No need for "trial and error" to find the right rubber or plastic chemical equipment. Consult American Hard Rubber Company first. Now eleven basic materials. Wide range of temperatures, pressures, strength. Backed by a century of experience. Write for facts today, or ask for name of Distributor.

Take the

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FOR HIGH PRESSURES OR BIG PIPE LINES

Ace Rubber-Lined Steel . . . strength and pressures of steel plus chemical resistance of hard rubber. Excellent for alkalis, most inorganic acids, many organic acids, all salts, bleaches. Sizes 1¼" to 24" and up. Bulletin CE-52.

ACE-HIDE ACID PAIL



Its made of a new rubber-plastic material that's tough, resilient, suitable for handling most acids and alkalis. 3-gal. size. Easy-pour, drip-proof spout. Also 1-qt. and 2-qt. dippers, hard rubber bottles, etc. Write for name of nearest dealer.









Crown Zellerbach Promotions

Crown Zellerbach Promotions (L to r) D. S. CONEY, res. mgr. of Crown Z. San Leandro converting plant since 1952, transfers to CZ San Francisco headquarters as director of management development, reporting to R. T. Kimberlin, vice pres. for corporate development, C. V. McDONALD, who is promoted to office mgr. at CZ Camas to succeed Hugh E. Burdon, scheduled to retire Sept. 1. Donald Eldridge, office mgr. at CZ San Leandro plant, becomes asst. office mgr. at Camas. position formerly fice mgr. at Camas, position formerly held by Mr. McDonald.





Appointments in East

GEORGE M. GRIFFITH, JR. (left) is promoted to newly created post of maintenance superintendent, Luke Mill, according to Floyd L. Davis, chief engineer, West Virginia Pulp and Paper Co., Luke, Md.

WILLIAM R. KENNEDY (right) is new sest sales manager for Hannard Pall Co.

asst, sales manager for Hammel-Dahl Co., Providence, R. I. Mr. Kennedy has b.s. in mechanical engineering from U. of Ala-bama. He was previously with Max B. Miller & Co. and Mason-Nielan Co.





Top Executives in Cleveland

Cleveland Worm & Gear Co. and its affiliate, The Farval Corp., announce the election of GEORGE H. ACKER (left) as president and HOWARD DINGLE (right) as chairman of both companies. All other officers were re-elected, including Willis W. Clark, vice president. Mr. Acker had been executive v.p. and Mr. Dingle, president. Mr. Dingle and Mr. Clark became interested in The Cleveland Worm & Gear Company in 1924. Under their leadership, the concern has become the world's outstanding manufacturer of worm gear power transmission equipment. Mr. Acker became associated with C.W.&G. in 1923 and was named chief engineer in 1925, advancing to exec. v.p. in 1952. Cleveland Worm & Gear Co. and its affili-



processing equipment of rubber and plastics

AMERICAN HARD RUBBER COMPANY
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DIVISION OF AMERACE CORPORATION

Walter Juckett Succeeds Father as Sandy Hill President

J. WALTER JUCKETT, elected president and general manager, Sandy Hill Iron & Brass Works,



J. Walter Juckett has been elected president and gen. mgr. of Sandy Hill Iron and Brass Works, succeeding his father, Frank A. Juckett, who died May 14. Walter Juckett, former secy-treas. and gen. mgr., had been associated with his father in Sandy Hill management since 1936, and has travelled extensively in Sandy Hill's interest, recently spending two months in Korea completing plans for a paper mill which Sandy Hill will design and equip.

Sandy Hill directors also announced these appointments:

Elected first v.p. is Wesley Joslyn, an-

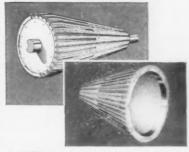




(Top, 1 to r) J. WESLEY JOSLYN; LOREN G. GALLUP; ARTHUR J. PARENT. (Below, 1 to r) L. G. BROCK-ELSBY; ALLEN A. LOWE; MILLARD F. HAYES.

other Norwich alumnus, and long associate of the Jucketts. Loren G. Gallup, assistant v.p. in charge of sales and mfg., was elected a director. Other key executives: Arthur J. Parent, v.p. and comptroller; L. G. Brockelsby, secy.-treas.; Allen A. Lowe, assistant v.p., and Millard F. Hayes Jr., mgr., international engineering div.

REVOLUTIONARY ADVANCE In Jordan Plug Design



In addition to the strongest and most adaptable solid plug ever developed, Adapta-Plug is available in sleeve form for easy, economical conversion of old worn plugs.



Completely bandless, easily stripped and filled. Inverted-wedge-type slots hold bars firmly in place, eliminate hazards of slot wear and corrosion. Any desired edge available. Write for Bulletin EDJ-1094.

Complete ONE-PIECE assembly to fit shell of any Jordan





Ideal filling for any Jordan, new or old, of any make. No keys or wedges needed. Easy to grind in. Many other advantages. Write for Bulletin EDJ-1094.

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Builders of Quality Stock Preparation Machinery

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STOP TELESCOPING ROLLS MUSHROOMING CORES



Use Air Operated HORTON Clutches and Brakes to control the sheet tension on your winders and back stands. Take the guess work out of tensioning and let HORTON equipment give you uniform tight rolls all the time.

VARIABLE SPEED CLUTCH PULLEYS

GOVERNOR CONTROLLED BRAKES

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Some "Over-Capacity" is Good

In a growth industry, it is desirable to have some margin of capacity over immediate demand with which to develop new business. Otherwise, you cannot realize your full growth potential. The kind of all-out operation we have been experiencing during much of the past several years is abnormal and unhealthy. In an industry like paper-with its high capital investment and increasingly complex technical requirements-prices and profits should be geared to a level of operation below the all-out maximum capacity."-JOHN H. HINMAN. chairman of the board, International Paper Co.

Portable Barkers in 5 Years

"Chip supply in many areas will level off as producing mills go out of business. When this occurs, more intensive relogging will return and thinning of young forests will increase. Portable barking and chipping for smaller pieces in thinning and rough tops and large limbs from old growth slash will come about. The economics of timber supply will force this in the next five years."—W. D. HAGENSTEIN, executive vice pres., Industrial Forestry Assn., Portland, Ore.

Managerial Opportunities

"We have an active program of management development. We are appraising our employes so that we can encourage them to assume greater managerial and supervisory responsibilities. In the next ten years, through retirements and transfers alone, one out of every three of our managerial posts will need to be refilled—and we want to do this with Canadians."—P. T. SINCLAIR, president, Crown Zellerbach Canada, Ltd.

New Alum Plant Will Supply Arkansas Mills

Plans to build the first plant in Arkansas for production of aluminum sulfate are revealed by General Chemical Division, Allied Chemical & Dye Corp. The liquid "alum" facilities at Pine Bluff will supply paper mills in that rapidly expanding paper manufacturing center.

This is the second new liquid "alum" plant which General Chem-

ical has announced since the first of the year, the other being at Port St. Joe, Fla.

With Pine Bluff, General Chemical will have 25 plants producing dry or liquid "alum" across the country. Others in the South are at Macon and Savannah, Ga.; Monroe and New Orleans, La. and Jacksonville, Fla.

Waste is Only Temporary

"Waste products in industry are only temporary. Every substance or material has a potential value. Industry executives should provide investigators with adequate facilities. Then take a double dose of patience and try to relax while the search is on for a by-product." —VICTOR CONQUEST, vice pres., Armour & Co.

Ideas More Important Than Facts

"Improved methods of rewarding creative effort are needed in industry. There should be greater emphasis on incentives to make the most effective use of the gifted individual. Effective use of the creative man requires an understanding and tolerant attitude which recognizes that ideas can be more important than facts, imagination more important than logic."—DR. JOHN T. RETTALIATA, president, Illinois Institute of Technology.

ONLY ONE PLUG VALVE

OPERATES EASILY, CLOSES TIGHTLY, and NEEDS NO LUBRICATION

ON SO MANY MILL SERVICES!

Throughout modern paper mills, you'll find DeZurik Valves on a variety of services. Their easy operation, efficient performance and low maintenance requirements make them "FIRST CHOICE" for so many installations! Some of them are

BASIS WEIGHT CONTROL—STOCK CHEST LEVEL CONTROL—AUTOMATIC KNOCK-DOWN SHOWER VALVE—LIQUID ALUM DISTRIBUTION SYSTEM—LIQUID SIZE DISTRIBUTION SYSTEM—CLAY and STOCK SLURRIES—THROTTLING STOCK OF JORDANS OR REFINERS—MANUAL and REMOTE PULPER DUMP VALVES—3-WAY and 4-WAY for MULTIPLE JORDAN HOOK-UP—BEATER or SLUSH-MAKER MAKEUP WATER—COMPRESSED AIR and MANY, MANY MORE.



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CLEANER WOOD - LOWER MAINTENANCE WITH CHAIN-SUSPENDED F.M.P. M-BAR BARKING DRUM



F.M.P. barking drum with air-operated gate

The F.M.P. 12' D. drum can be speeded up to 8 r.p.m. during the hard barking season. This is due to the chain-suspension with shock absorbing spring-loaded bearings.

The F.M.P. drum can run immersed in water as there are no bearings underneath. The same drum can also operate partly dry and partly wet with a bulkhead between the dry and wet sections.

The F.M.P. Shell

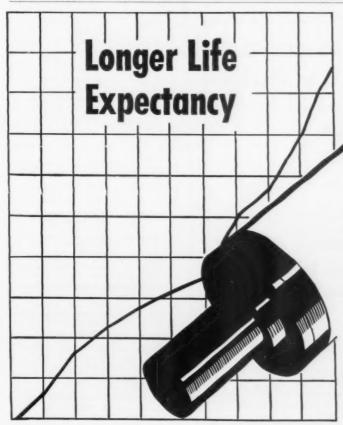
Hot rolled M-bars welded (since 1933) and riveted with high tensile rivets to heavy ship channel rings.

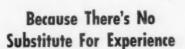
The $12' \times 22^{1/2}'$ drum shell is supported by 4 heavy chains at 164 points. This even distribution of the load and the spring loaded bearings for the chains are the reasons why the F.M.P. drumshell lasts over 20 years.

Tires, guide rings, and sprocket ring are split so that they can be replaced quickly.

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Challenging and responsible position for individual with degree in mechanical, civil or chemical engineering with at least five years experience in pulp and paper or similar industrial fields. Position is at our International Falls, Minnesota location. Salary open. Your reply will be kept confidential and should include personal, educational, and work history together with salary thinking.

Write Don Lindert, Industrial Relations Department, Minnesota & Ontario Paper

Department, Minnesota & Ontario Paper Company, 500 Investors Building, Minneapolis 2, Minnesota.

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Excellent opportunity for individual with operating and supervisory experi-ence in a Southern Kraft Pulp mill.

Supervision of start up and operation of Pulp Mill with capacity of 300+tons per day.

Responsibilities will include operation of 5 stage Bleach Plant, wood yard, and chemical preparation as well as pulp mill.

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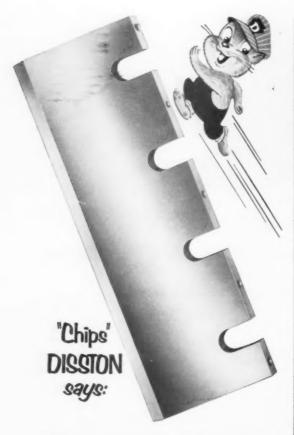
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SELF-SUPPORT-

SYPHON ELBOW

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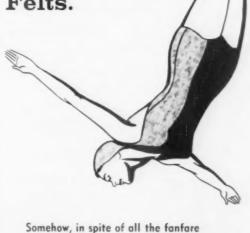
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The LAST WORD

PULP & PAPER

EDITORS' PAGE

About a Guy Named Joe

A gentleman of Irish descent whose contributions to the betterment of this industry reach far beyond his company, has stepped down from his wheelhouse.

Joseph M. Conway likes boats and we editors of PULP

& Paper will always regret we thought we were too busy to accept his invitations to cruise Green Bay. Now he tells us he has bought a home in St. Petersburg, Fla. Any more sailing he does, won't be at the wheel of a "ship of state" in this industry. For Joe has retired.

Because his services meant so much to the entire pulp and paper industry, we editors felt they should be noted on this page.

Born in 1890 in Seney, Mich., he worked his way through Ferris Institute, learning accounting.

Then he learned about the dignity of labor, working the toughest jobs in the mines of northern Minnesota. He almost died after an appendicitis operation in 1912. He made another comeback after a heart attack in 1946.

In his early 30's he held important banking posts in Chicago, as deputy commissioner of banking in Michigan and finally, in a Green Bay bank, which had extended too much credit to floundering paper mills. His real job was to save the mills.

A few years later he spearheaded a drive to save Hoberg Paper Mills, whose condition was broke and hopeless, in the opinion of many. Joe Conway promised employes if they took a pay cut, they could get it back, and more. He kept his promise. He served as president and general manager of Hoberg, later Charmin Mills, for 33 years.

At a huge farewill dinner given to Joe Conway by two paper mill unions in Green Bay, a national vice president of the Pulp, Sulfite Union said Mr. Conway was one of three men in the Wis.-Mich.-Minn. area "who have contributed most among employers to the understanding of unions."

To this high praise, PULP & PAPER would like to add that the present high regard for the pulp and paper industry throughout the Lake States is due more to Joe Conway's achievements than to any other single individual.

Mr. Conway founded (in 1939), and for many years headed, the unique Sulphite Pulp Mfrs. Research League, which has spent many millions to solve the waste liquor problem of these mills. It has been expanded into a nationwide organization—a tribute in itself to him. This organization brought about a complete reversal of the public attitude—and the attitude of sportsmen and officials—toward the chemical pulp mills in the Lake States. One can look back in the columns of PULP & PAPER and see how Joe Conway kept hammering away at this precept—that waste liquor is an economic and scientific problem, and not a political one.

Several years ago, Mr. Conway brought together the men of Wisconsin's paper mills to organize the Wisconsin Paper Industry information services, which has done a remarkable job in winning friends for the industry. It set a pattern for all other regions of this country where pulp and paper are made.



J. M. CONWAY

"One must have respect for human values, whether he be an employer or an employe." That remark by Joe Conway explains a lot about him.

Our guess is that before he gave up the helm at Charmin Paper Mills, he wanted to be sure a company with principles as high as his own would take over. He knew—as we all know—that Procter & Gamble, the new owner, is a firm which has led in improved conditions for employes through three generations of management.

Happy sailing, Joe, you earned it.

Shakespeare and Paper

There are plenty of apt phrases from Shakespeare that a papermaker could use, writes Graham Arnold in London's Paper-Maker magazine. Like: "What wood is this before us?" from Macbeth; "this beauteous clay" from King John; "the purity and whiteness of my sheets" from Winter's Tale; "why tender'st thou that paper to me?" and "oh, damned paper," both from Cymbeline; "to put in wild and savage stock" from Henry V; "here will I rest me till the break" from Midsummer Night's Dream; "they may break his foaming" from Richard II; "as heavy as my weight shall be" from Taming of the Shrew; and "shut your mouth, dame, or with this paper shall I stop it" from King Lear.

If you hear any such remarks around your mill, you may discover someone who has been reading the bard.

Editor Stephenson Honored

Congratulations to J. Newell Stephenson, veteran editorin-chief of the Pulp and Paper Magazine of Canada for being awarded the honorary degree of doctor of science at the University of Maine's recent commencement.



Finds PULP & PAPER is Getting Big

JUNE BOLGER, wife of HUGH BOLGER, Pacific Coast sales engineer for Cameron Machine Co., displays proof that she tripped over a recent big fat issue of PULP & PAPER The postman had placed the magazine against the screen door of the Bolger home. She assured our West Coast Editor Lou Blackerby, who took this picture and was very sympathetic, that the Bolgers still look forward happily to each news-packed issue of PULP & PAPER. The Bolgers, incidentally, are moving to 1373 Franchere Pl., Sunnyvale, Calif.

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